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Benthic errantiate polychaetes

of British Columbia and Washington

Karl Banse · Katharine D. Hobson

BULLETIN 185

Ottawa 1974

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BENTHIC ERRANTIATE POLYCHAETES OF BRITISH COLUMBIA AND WASHINGTON

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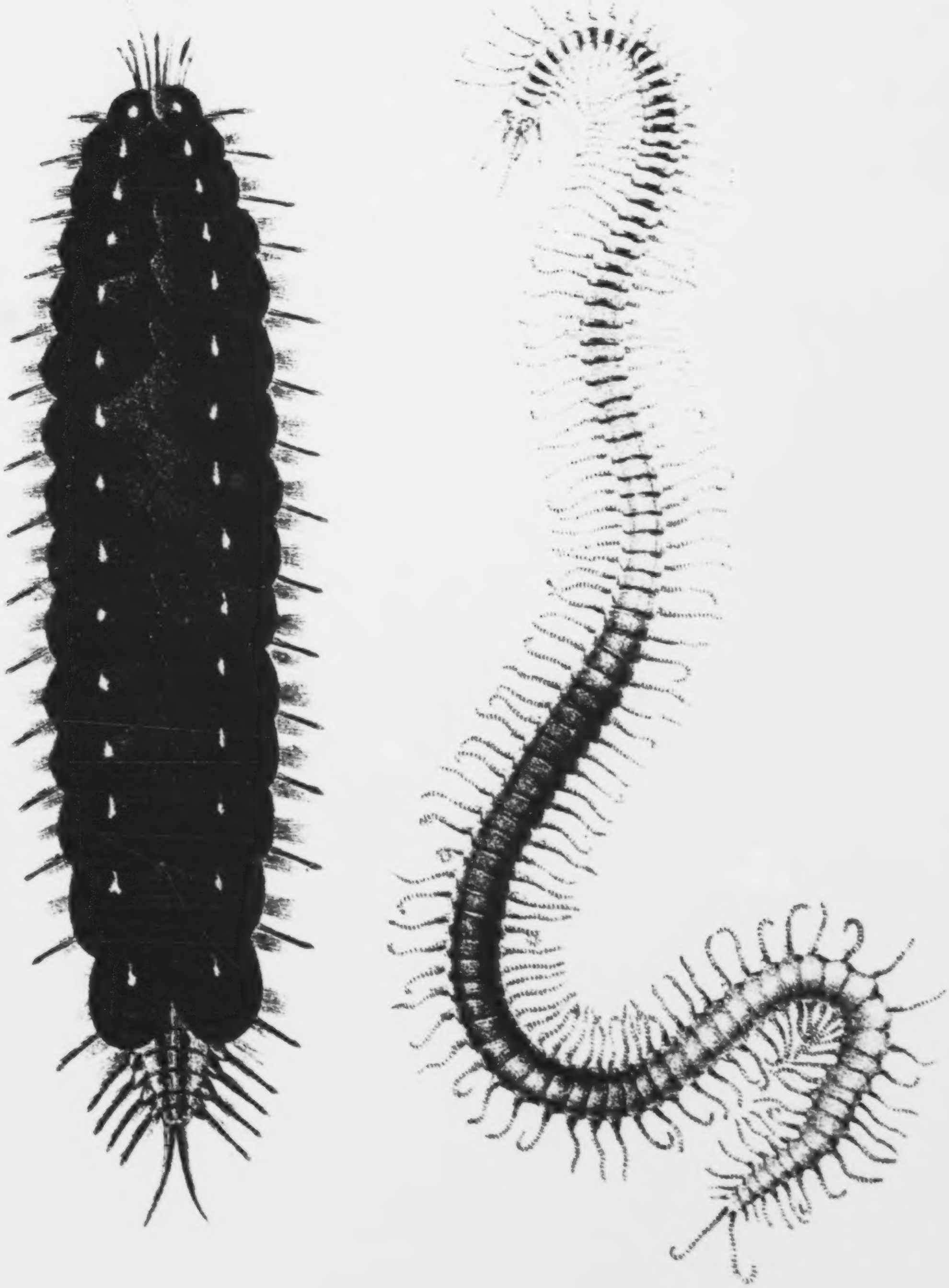

Harmothoe imbricata (Linnaeus) and *Syllis hyalina* Grube, enlarged and in dorsal views. Sources: McIntosh (1900, 1910).

BULLETIN 185

Benthic errantiate polychaetes

of British Columbia and Washington

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Abstract

BANSE, K., AND K. D. HOBSON. 1974. Benthic errantiate polychaetes of British Columbia and Washington. Bull. Fish. Res. Board Can. 185: 111 p.

This Bulletin is concerned with the benthic errantiate polychaetes (Annelida) of British Columbia and Washington, the central and best-known section of the southern part of the Oregonian–Aleutian biogeographic region. The principal external diagnostic characters of all the families of benthic errantiate polychaetes are presented in a tabulated scheme. Keys to all the genera from the continental shelves of the cold–temperate North Pacific Ocean are provided under the relevant family. In contrast, the species keys treat only those species recorded, landward of the 200-m isobath, from British Columbia and Washington and an additional 22 species which may be expected to occur there. A checklist of the 195 species known from British Columbia and Washington is provided; names in boldface indicate that the authors have seen specimens from British Columbia or Washington.

The diagnostic characters are presented in the specific keys, as well as in the generic keys, in a series of alternative choices. Supplemental characters for certain species, however, are added to preclude species, not previously recorded from British Columbia and Washington but known from elsewhere in the cold–temperate North Pacific, from fitting the key accidentally. References are cited below the specific name if the species was not treated in *Canadian Pacific Fauna* (Berkeley and Berkeley 1948) or if the description was inadequate or the species was misidentified therein. About 330 detailed figures are given.

Brief instructions for collection, fixation, identification, and use of the key, as well as a glossary and an index to the scientific names, are provided. *Onuphis longibranchiata* Berkeley is referred to *Diopatra ornata* Moore. A diagnosis of *Bergstroemia* Banse, a new subgenus of *Eulalia* Savigny *s.l.* (Phyllodocidae), is added.

Résumé

Banse, K., and K. D. Hobson. 1974. Benthic errantiate polychaetes of British Columbia and Washington. Bull. Fish. Res. Board Can. 185: 111 p.

Ce Bulletin traite des polychètes errants benthiques (Annelida) de la Colombie-Britannique et de l'Etat de Washington, la partie centrale et la mieux connue du secteur méridional de la région biogéographique Orégonienne–Aléoutienne. Nous donnons en tableau les principaux caractères diagnostiques externes de toutes les familles de polychètes errants benthiques. Pour chaque famille, nous présentons une clé permettant d'identifier tous les genres trouvés sur les plateaux continentaux de la région froide–tempérée du Pacifique Nord. Par ailleurs, les clés des espèces ne couvrent que celles qui ont été signalées en dedans de l'isobathe de 200 m en Colombie-Britannique et dans l'Etat de Washington, en plus de 22 autres espèces qu'on peut s'attendre de rencontrer dans cette région. Nous donnons une liste de 195 espèces connues de la Colombie-Britannique et de l'Etat de Washington; les noms en caractères gras signifient que les auteurs ont vu des spécimens provenant de la Colombie-Britannique et de l'Etat de Washington.

Les clés des espèces, ainsi que celles des genres donnent les caractères diagnostiques en une série de choix alternatifs. Cependant, on y ajoute, pour certaines espèces, des caractères additionnels, afin d'éviter que ces espèces, non signalées en Colombie-Britannique et dans l'Etat de Washington mais connues ailleurs dans la zone froide–tempérée du Pacifique Nord, n'entrent accidentellement dans la clé. On donne des références sous les nom spécifique dans les cas où l'espèce n'est pas traitée dans *Canadian Pacific Fauna* (Berkeley et Berkeley 1948), ou encore si la description y est inadéquate ou l'espèce incorrectement identifiée. Le Bulletin comprend 330 illustrations détaillées.

Nous donnons de brèves directives pour la collection, la fixation, l'identification des spécimens et l'usage des clés, ainsi qu'un Glossaire et un index des noms scientifiques. *Onuphis longibranchiata* Berkeley est referée à *Diopatra ornata* Moore. Enfin, nous ajoutons la diagnose de *Bergstroemia* Banse, un nouveau sous-genre d'*Eulalia* Savigny *s.l.* (Phyllodocidae).

Introduction

PURPOSE AND SCOPE OF THE KEYS

The temperate northwest American marine fauna extends from Baja California into the Bering Sea. Biogeographically the area can be divided into at least two provinces. Most workers agree that the coast near Point Conception is characterized by a marked faunistic and floristic change among bottom organisms, separating a Californian Province (warm–temperate) from an Oregonian–Aleutian Province (cold–temperate). According to Scagel (1963) and Valentine (1966), another break in many distributions is apparent in southeastern Alaska. The marine fauna and flora of the thus delineated southern part of the Oregonian–Aleutian Province is best known in its central section, the coasts of British Columbia and Washington.

In the benthic realm of this section, polychaetes are important ecologically, as elsewhere, because they often account for a significant portion of the species and the biomass. In Puget Sound, they contribute about half the number of species and half the biomass of the macrofauna on sand and mud bottoms (Lie 1968); on the continental shelf off Washington, they account for 19–64% of the average biomass in the three prevailing communities (Lie 1969). Since polychaetes obviously play a significant role on the sea bed, investigators must be able to identify the members of this group.

Intensive taxonomic work on the benthic polychaetes of the temperate northwest American fauna dates back to J. P. Moore (since 1904), who studied material from the entire area. The subsequent literature has been dominated (since 1923) by E. and C. Berkeley and (since 1936) by O. Hartman, who dealt primarily with polychaetes of British Columbia and of central and southern California, respectively.

The only available keys for the polychaete fauna of any part of the Oregonian–Aleutian Province are those for the polychaetes of British Columbia (Berkeley and Berkeley 1948; 1952). Although these keys were more than adequate for some time, their usefulness has gradually decreased as our knowledge of polychaetes has grown. The number of known benthic forms in British Columbia and Washington has been augmented from the 295 species dealt with in their keys to more than 470. Keys for the polychaete fauna of other parts of the temperate North Pacific Ocean have been provided for California by Hartman (1968; 1969), for the far-eastern seas of the USSR by Ushakov (1955), and for Japan by Imajima and Hartman (1964). Faunistic differences within the northern North Pacific, however, limit the applicability of these works to other regions. For example, the comprehensive keys for the errantiate polychaetes of California (Hartman 1968) contain slightly less than two-thirds of the benthic species now known for British Columbia and Washington.

Because the available polychaete keys are outdated or inadequate for the Oregonian–Aleutian Province, ecological work entailing the identification of polychaetes has become difficult for the nonspecialist. We, therefore, present keys for the identification of the benthic errantiate species from the continental shelves and inshore waters of British Columbia and Washington. The pelagic errantiate species of the region can be identified by the use of Dales (1957), Dales and Peter (1972), and Ushakov (1972). We work currently on a key to the sedentary polychaetes of British Columbia and Washington and hope that all these keys will serve as stepping stones toward a monographic treatment of the Polychaeta of the temperate northeastern Pacific Ocean.

We give first a summary of the principal external characters of all families of benthic errantiate polychaetes and keys to all genera known from the continental shelves of the cold–temperate North Pacific Ocean. Largely following Hedgpeth (1957) and Zenkevitch (1963, p. 744), we delimit the area to the south by Point Conception on the Californian coast and by latitude 36°N off the Pacific coast of Japan; we include also the Sea of Japan, except for the coast of Honshu west of the Noto Peninsula and the southern coast of Korea. We allowed ourselves some latitude in deciding which genera to identify because cold–temperate forms may show submergence and occur south of the indicated borders in cooler water on the deep part of the shelf. The poleward coverage of the keys is extended beyond the limit of the cold–temperate North Pacific and includes the northern part of the Sea of Okhotsk and Point Barrow, Alaska.

The species keys, in contrast to the generic keys, treat only species of British Columbia, Washington and adjacent areas, recorded landward of the 200-m isobath. Of the 217 species or subspecies incorporated in the keys, 195 are now known to occur in British Columbia and Washington. A checklist (see p. 7) expands the areal coverage and updates a similar list for British Columbia by Berkeley (1967).

This work was partially supported by the U.S. Atomic Energy Commission, contract AT(45-1)-2225 (ref: RLO-2225-T26-16) to the Department of Oceanography, University of Washington; a grant from the Whitehall Foundation to the Systematics-Ecology Program, Marine Biological Laboratory, Woods Hole; and funds of the Friday Harbor Laboratories, University of Washington. Dr Dora P. Henry, University of Washington, has pointed out to us inconsistencies of terminology and content, as well as given encouragement and practical help. Mrs Joan C. Reid and Mrs Francie Sorenson have typed numerous drafts. We are truly grateful to all these persons and agencies. This is contribution No. 745 of the Department of Oceanography, University of Washington, Seattle, Wash. 98195, USA.

COLLECTION AND TREATMENT OF SAMPLES

Polychaetes may be found readily in the intertidal zone underneath rocks, among clumps of organisms, such as mussels or barnacles, in masses of seaweed, as well as by digging in sand and mud flats. Forceps and small paint brushes are helpful for picking them up without injuring them. Animals may also be obtained in deeper water by the use of dredges, grabs, or sediment corers. Diving is more efficient for collecting specimens on rocky substrates encrusted by animals and the many forms associated with algae as the plants can be placed in containers at the site of collection. Small forms may be recovered from sediment samples by washing the sediment through a series of screens. The mesh size of the lowest screen should not exceed 1 mm but may be as small as 0.25–0.5 mm for mud.

Both large and small forms living in their own tubes or in clumps of other organisms can be retrieved by letting the samples stand in sea water for 1–3 days; a slightly elevated temperature will accelerate putrefaction of the water. Many of the large forms will thus be found on the bottom of the vessel, and many of the small forms will crawl near the water surface on the lighted side. Interstitial sand fauna can be obtained similarly by filling tall containers with the sand and allowing them to stand for 1–3 days. In both cases, however, the population obtained is biased because species differ in their sensitivity to deoxygenation and in their mobility. Other methods for concentrating small forms are described by Hulings and Gray (1971).

Although the above methods will give good results in obtaining specimens for taxonomic studies, they will not be very helpful in ecological work that requires quantitative sampling. Methods used for quantitative sampling of polychaetes over 0.5–1 mm in length are reviewed by Holme and McIntyre (1971). For smaller species, Hulings and Gray (1971) should be consulted. It may be noted that the collection of a quantitative sample requires about the same ship time as that of a qualitative sample and is therefore preferable, even if the initial interest is of a taxonomic nature. However, the sorting of a quantitative sample is much more time-consuming than simply picking out different types of specimens.

Sediment samples and animals or clumps of organisms containing polychaetes can be preserved in the field in 10% formalin, i.e. 1 volume of 40% formaldehyde (concentrated formalin) in 9 volumes of sea water. The stock solution of concentrated formalin should be buffered by excess borax (sodium borate) or powdered calcium carbonate. Care must be taken that the formalin is mixed thoroughly with the sediment samples; sponges should be cut into pieces to insure fast fixation. Before sorting this material, the formalin should be removed by washing in tap water because permanent allergies can result from inhaling the fumes for extended periods; well-fixed animals are not harmed by being kept overnight in tap water at room temperature.

When screens $\leq$ 1 mm mesh size have been used and quantitative results are desired, organisms must be sorted from the sediment residue under a magnifying lens. Small organisms, which often are whitish, can be more easily seen in a black tray. Sorting of fixed material is facilitated by staining the entire residue collected from the screens with Rose Bengal (0.1% solution), replacing the dye solution with water immediately before the sorting in white trays. Rose Bengal can be used also with material preserved in alcohol.

Live study is useful for observing the color patterns, the form and length of appendages, and for observing retractile gills in species of the Glyceridae. Although the key is written for use with preserved material, this type of information should be noted in case new species or records are found. If live material is transported to the laboratory, large specimens should be carried in separate containers to protect the small species; warming of the samples should be avoided.

FIXATION AND PRESERVATION OF SPECIMENS

Fixing for identification purposes is easily accomplished with 10% formalin in sea water (see previous section). Alcohol as a fixative results in precipitates with sea water so that specimens must be quickly transferred into alcohol diluted with distilled water. Alcohol also causes shrinkage when used on live animals and soon hardens the tissues. Animals often cannot be identified readily if they are coiled during fixation or as a result of being squeezed into containers that are too small, and in addition are hardened during storage.

To facilitate identification, it is advisable to anesthetize animals, before fixation, with an isotonic solution of magnesium salts (7.3% $MgCl_2 \cdot 7H_2O$, or 20.9% $MgSO_4 \cdot 6H_2O$ for water of 34‰ salinity), chloroform [provide excess] or propylene phenoxetol (0.15% stock solution diluted by nine parts of sea water; see McKay and Hartzband 1970). A few drops of concentrated formalin in 1 liter of sea water will also kill animals in a relaxed state, as does the very gradual addition (a few drops at a time to 0.1 liter of sea water) of ethyl alcohol. Experience will tell the time required for any of these methods; note that at high temperatures, decomposition may commence before the narcotization is complete.

In many families, the proboscis provides diagnostic characters. The addition of drops of acetic acid to the sea water or placing the worms in 10–30% alcohol before fixation is often effective in evaginating the proboscis. After the organ is everted, withdrawal can be prevented in large specimens by holding them behind the head region with forceps until movement ceases.

Polychaetes can be stored in 5% formalin for ½–1 year, provided the organisms do not make up more than half of the total volume and the samples are kept in a cool, dark place. The animals remain soft so that handling while identifying is facilitated; however, they are more easily damaged if not hardened. After extended storage in formalin, the material becomes unrecognizable because the organic matter is gradually dissolved by break-down products of the formaldehyde. To insure that the specimens will not deteriorate, any valuable collection should be transferred to ethyl or isopropyl alcohol. After washing in tap water, place in 30% alcohol, and then transfer through 50% to 70–80% alcohol. Depending on their size, animals need to be kept in each grade from a few minutes (for forms 1 mm or less) up to ½ hr. Because isopropyl alcohol is less miscible with water than ethyl alcohol, it requires more stirring while being diluted. Addition of glycerin to the alcohol prevents severe damage to the specimens if a stored sample is allowed to dry up.

Representative samples of material on which publications are based, especially those including new species or records, should be deposited in a large museum so that they will be readily available if needed for further studies.

IDENTIFICATION

A dissecting microscope and a compound microscope with a 100× oil immersion lens are necessary for identification of most species. Failure to use high enough magnification for studying setae is probably the most common technical reason for misidentification.

For the study of the setae, parapodia must be excised. Even in forms small enough to be mounted whole on microscopical slides, setae usually cannot be seen in proper orientation without dissecting the parapodia. Because of variability between specimens, as well as within body regions of individual specimens, several parapodia should be examined. Scissors must be used on large and hardened medium-sized (length 0.5–1 cm) forms; here, scissors designed for eye surgery are best. When setae are damaged throughout the entire body section in question, setal sacks may be removed from large specimens with a forceps, and the nonemerged setae studied. Preparation of microscopical mounts of setae from very fleshy parapodia is facilitated by macerating the tissue on the slide with concentrated KOH. In smaller animals, as well as in soft, medium-sized specimens, parapodia can be severed by holding the animals with one needle against the bottom of the dish and pulling the parapodium off with another needle. For dissecting very small forms, small needles may be made by fastening fine insect pins (minutia needles) in the end of glass pipettes with paraffin or wax. The pin can be sharpened on a stone or fine polishing paper to obtain a sharp edge.

Permanent mounts of parapodia or setae can be made [transfer from water] in glycerin, glycerin–gelatin, or lactophenol (one part lactic acid, one part phenol); the latter macerates the tissue slightly. The cover slip must be ringed with lacquer. Natural or synthetic resins are suitable as mounting media unless they have a refractory index similar to that of the setae (*e.g.* Canada balsam).

Pharyngeal structures of small forms, such as those of the Syllidae and Dorvilleidae, may be studied by clearing the entire specimen for a few hours in glycerin [transfer from water or alcohol] or in oil of cloves [transfer from alcohol]. In larger specimens of Syllidae, the pharynx when not evaginated can be removed from the dorsal side. Microsurgical scissors are useful; suitable scalpels can be made by breaking a pointed piece off the edge of a razor blade and glueing it with wax to a stick so that a spear-like tool results. In large members of the Nereidae, Nephtyidae, Glyceroidea, and Eunicoidea, a specimen secured in a wax pan may be opened on the ventral side with ordinary dissecting tools to expose the pharynx. Cutting off the posterior end of the pharynx usually permits the pharynx to be brought out far enough for inspection; it then can be tucked back in for safe keeping.

USE OF THE KEYS

All of the benthic families of Errantia are considered. They are arranged according to the system of Hartman (1959a), without being assigned to orders (*cf.* Dales 1962; Storch 1968). In general, we follow Hartman (1959a; 1965b) also in the nomenclature of the taxa. In respect to family names, we are aware of some inconsistency of usage; for example, the Exogoninae, among the Syllidae, may be as far removed from the Autolytinae as are the Glyceridae from the Goniadidae. On the generic level, we often have used names in the broader sense, thus considering genera of some authors as subgenera. In the few cases where the validity of the species name has not been ascertained, the name prevalent in the current literature of the North Pacific fauna is employed.

The principal diagnostic characters of the families are summarized in Tables 1–4, pages 12–19. The format chosen should be more helpful than a dichotomous key, especially when working with damaged specimens. Families without representatives in the cold–temperate North Pacific Ocean are not treated further. For the superfamilies, Aphroditoidea, Glyceroidea, and Eunicoidea, dichotomous keys, however, are provided on pages 21, 77, and 81.

Within each family, the species keys are preceded by keys to all the genera of benthic polychaetes known from the continental shelves of the cold–temperate North Pacific Ocean as defined on p. 2. Genera and species not known from British Columbia and Washington are marked by (†) unless we have reason to expect their occurrence. The latter taxa, which are marked with (*), have been recorded both to the north and south of British Columbia and Washington, or off Oregon.

The diagnostic characters for identifying the known species of British Columbia and Washington are presented in the specific keys in the conventional manner, *i.e.* in a series of alternative choices. Some couplets include additional statements which are not contrasted with each other. The purpose is to preclude species known from elsewhere in the cold–temperate Pacific Ocean but found for the first time off British Columbia or Washington from fitting the key accidentally. If a specimen does not match the characterization of a species completely, it is mandatory to consult the appropriate references cited in the keys.

The authors of available monographic treatments are listed below the family names. References are usually not given below the species name if the species was recorded in Berkeley and Berkeley (1948), *Canadian Pacific Fauna* (CPF, herein). If, however, the description is inadequate or the species is misidentified, one or more citations are provided. If only one reference is given, it contains both the description and the record. If two or more are cited, the semicolon separates that (or those) supplying the description from the following one establishing the record.

An explanation of the abbreviations used in the Tables and Figures (p. 94) and a glossary of the basic terminology (p. 95) follow the keys.

Checklist of Benthic Errantiate Polychaetes from the Continental Shelves of British Columbia and Washington

Names in boldface indicate that the authors have seen specimens from British Columbia or Washington. A query indicates doubtful records. Species known only from a sexual stage in the plankton are not included.

APHRODITIDAE

Aphrodita japonica Marenzeller
Aphrodita longipalpa Essenberg
Aphrodita negligens Moore
Aphrodita parva Moore
Laetmonice pellucida Moore

POLYNOIDAE

Antinoella macrolepida (Moore)
Arctonoe fragilis (Baird)
Arctonoe pulchra (Johnson)
Arctonoe vittata (Grube)
Eunoe depressa Moore
Eunoe nodosa (Sars)
Eunoe oerstedi Malmgren
Eunoe senta (Moore)
Eunoe uniseriata Banse and Hobson
Gattyana ciliata Moore
Gattyana cirrosa (Pallas)
Gattyana iphionelloides (Johnson)
Gattyana treadwelli Pettibone
Halosydna brevisetosa Kinberg
Harmothoe extenuata (Grube)
Harmothoe fragilis Moore
Harmothoe imbricata (Linnaeus)
Harmothoe lunulata (delle Chiaje)
Harmothoe multisetosa (Moore)
Hermadion truncata (Moore)
Hesperonoe complanata (Johnson)
Hololepida magna Moore
Lepidasthenia berkeleyae Pettibone
Lepidasthenia longicirrata Berkeley
Lepidonotus squamatus (Linnaeus)
Polyeunoa tuta (Grube)
Polynoe canadensis (McIntosh)
Polynoe gracilis (Verrill)
Tenonia kitsapensis Nichols

POLYODONTIDAE

Peisidice aspera Johnson

SIGALIONIDAE

Pholoe minuta (Fabricius)
Sthenelais berkeleyi Pettibone
Sthenelais tertiaglabra Moore

CHRYSOPETALIDAE

Paleanotus bellis (Johnson)

AMPHINOMIDAE

Chloeia entypa Chamberlin

EUPHROSINIDAE

Euphrosine arctia Johnson
Euphrosine bicirrata Moore
Euphrosine heterobranchia Johnson
Euphrosine hortensis Moore

PHYLLODOCIDAE

Eteone (*Eteone*) *longa* (Fabricius)
E. (Eteone) pacifica Hartman
E. (*Eteone*) *spetsbergensis* Malmgren
E. (Eteone) tuberculata Treadwell
Eulalia (Bergstroemia) nigrimaculata Moore
Eu. (Eulalia) bilineata (Johnston)?
Eu. (Eulalia) levicornuta Moore
Eu. (Eulalia) quadrioculata Moore
Eu. (*Eulalia*) *viridis* (Linnaeus)
Eu. (*Eumida*) *longicornuta* Moore
Eu. (Eumida) sanguinea Oersted
Eu. (Pterocirrus) macroceros (Grube)
Eu. (Pterocirrus) parvoseta Banse and Hobson

Hesionura coineaui difficilis (Banse)
Mystides borealis (Théel)
Notophyllum (Hesperophyllum) tectum (Chamberlin)
N. (Notophyllum) imbricatum Moore
Phyllodoce (Anaitides) citrina Malmgren
P. (Anaitides) groenlandica Oersted
P. (*Anaitides*) *maculata* (Linnaeus)
P. (Anaitides) madeirensis Langerhans
P. (*Anaitides*) *mucosa* Oersted
P. (Anaitides) multiseriata Rioja?
P. (Anaitides) williamsi (Hartman)
P. (Genetyllis) castanea (Marenzeller)
P. (Paranaitis) polynoides (Moore)

HESIONIDAE

Gyptis brevipalpa (Hartmann-Schröder)
Kefersteinia cirrata (Keferstein)
Micropodarke dubia (Hessle)
Ophiodromus pugettensis (Johnson)

PILARGIDAE

Otopsis longipes Ditlevsen
Pilargis berkeleyae Monro
Sigambra tentaculata (Treadwell)

SYLLIDAE

Autolytus (*Autolytus*) *magnus* Berkeley
A. (*Autolytus*) *verrilli* Marenzeller
A. (*Proceraea*) *cornutus* Agassiz
A. (*Proceraea*) *prismaticus* (Fabricius)
A. (Proceraea) trilineatus Berkeley and Berkeley
Brania brevipharyngea Banse
Eusyllis assimilis Marenzeller
Eusyllis blomstrandi Malmgren
Eusyllis japonica Imajima and Hartman
Eusyllis magnifica (Moore)
Exogone gemmifera Pagenstecher?
Exogone lourei Berkeley and Berkeley
Exogone molesta Banse
Exogone verugera (Claparède)
Odontosyllis fulgurans japonica Imajima
Odontosyllis parva Berkeley
Odontosyllis phosphorea Moore
Pionosyllis gigantea Moore
Pionosyllis uraga Imajima
Sphaerosyllis brandhorsti Hartmann-Schröder
Sphaerosyllis hystrix Claparède
Sphaerosyllis pirifera Claparède
Streptosyllis latipalpa Banse
Syllides japonica Imajima
Syllides longocirrata Oersted
Syllis (Ehlersia) heterochaeta Moore
S. (Syllis) elongata (Johnson)
S. (*Syllis*) *spongiphila* Verrill
S. (Typosyllis) adamantea adamantea (Treadwell)
S. (*Typosyllis*) *alternata* Moore
S. (Typosyllis) armillaris (Müller)
S. (Typosyllis) harti Berkeley and Berkeley
S. (*Typosyllis*) *hyalina* Grube
S. (Typosyllis) pulchra Berkeley and Berkeley
S. (Typosyllis) stewarti Berkeley and Berkeley
Trypanosyllis (Trypanedenta) gemmipara Johnson
T. (*Trypanedenta*) *ingens* Johnson

NEREIDAE

Cheilonereis cyclurus (Harrington)
Micronereis nanaimoensis Berkeley and Berkeley
Nereis (Ceratonereis) paucidentata Moore
N. (*Eunereis*) *wailesi* Berkeley and Berkeley
N. (Neanthes) brandti (Malmgren)
N. (*Neanthes*) *limnicola* Johnson
N. (*Neanthes*) *virens* Sars
N. (*Nereis*) *eakini* Hartman
N. (*Nereis*) *grubei* (Kinberg)
N. (Nereis) neoneanthes Hartman
N. (Nereis) pelagica Linnaeus
N. (Nereis) procera Ehlers
N. (Nereis) vexillosa Grube
Nicon moniloceras (Hartman)?
Perinereis monterea (Chamberlin)
Platynereis bicanaliculata (Baird)

NEPHTYIDAE

Aglaophamus rubella anops Hartman
Nephtys assignis Hartman

Nephtys brachycephala Moore
Nephtys caeca (Fabricius)
Nephtys caecoides Hartman
Nephtys californiensis Hartman
Nephtys ciliata (Müller)
Nephtys cornuta cornuta Berkeley and Berkeley
Nephtys cornuta franciscana Clark and Jones
Nephtys ferruginea Hartman
Nephtys longosetosa Oersted
Nephtys punctata Hartman
Nephtys rickettsi Hartman

SPHAERODORIDAE

Sphaerodoropsis minuta (Webster and Benedict)
Sphaerodoropsis sphaerulifer (Moore)
Sphaerodorum papillifer Moore

GLYCERIDAE

Glycera americana Leidy
Glycera capitata Oersted
Glycera convoluta Keferstein
Glycera gigantea Quatrefages
Glycera robusta Ehlers
Glycera siphonostoma (delle Chiaje)
Glycera tesselata Grube
Hemipodus borealis Johnson

GONIADIDAE

Glycinde armigera Moore
Glycinde picta Berkeley
Glycinde polygnatha Hartman
Goniada annulata Moore
Goniada brunnea Treadwell
Goniada maculata Oersted

ONUPHIDAE

Diopatra ornata Moore
Epidiopatra hupferiana monroi Day
Onuphis conchylega Sars
Onuphis elegans (Johnson)
Onuphis geophiliformis (Moore)
Onuphis iridescens (Johnson)
Onuphis stigmatis Treadwell

EUNICIDAE

Eunice aphroditois (Pallas)
Eunice valens (Chamberlin)

LUMBRINERIDAE

Lumbrineris bicirrata Treadwell
Lumbrineris californiensis Hartman
Lumbrineris cruzensis Hartman
Lumbrineris inflata Moore
Lumbrineris japonica (Marenzeller)
Lumbrineris lagunae Fauchald
Lumbrineris latreilli Audouin and Milne-Edwards
Lumbrineris limicola Hartman?
Lumbrineris luti Berkeley and Berkeley
Lumbrineris pallida Hartman
Lumbrineris similabris Treadwell
Lumbrineris zonata (Johnson)
Ninoe gemmea Moore

ARABELLIDAE

Arabella iricolor (Montagu)
Arabella semimaculata (Moore)?
Drilonereis falcata minor Hartman
Drilonereis longa Webster
Notocirrus californiensis Hartman

DORVILLEIDAE

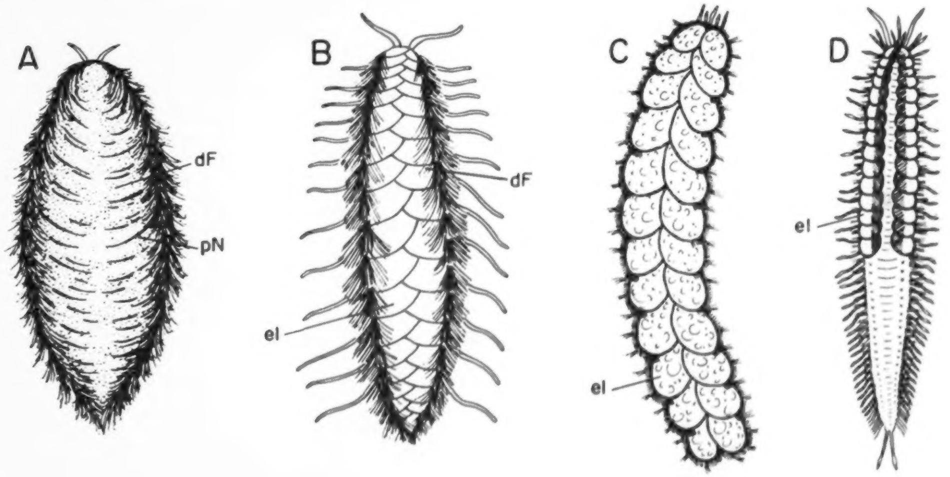
Dorvillea annulata (Moore)
Dorvillea caeca (Webster and Benedict)
Dorvillea japonica (Annenkova)
Dorvillea moniloceras (Moore)
Dorvillea pseudorubrovittata Berkeley
Dorvillea rudolphi (delle Chiaje)
Ophryotrocha vivipara Banse
Protodorvillea gracilis (Hartman)

Principal External Diagnostic Characters of Families of Benthic Errantiate Polychaetes

Polychaetes usually are easily identified to the family level on the basis of their external appearance. For this purpose, the following Tables provide an illustration and a summary of some external diagnostic characters for each benthic family of errantiate polychaetes. The user should not attempt to classify specimens solely on the basis of the figures; the tabular material also must be utilized so that families with similar appearances are not confused.

Many of the figures are original. The remaining have been drawn from: CPF, Fauvel (1923), Hartman (1939, 1944, 1954b, 1960), Imajima (1966a,e, 1967b, 1969), Imajima and Hartman (1964), Johnson (1897), McIntosh (1885), Pettibone (1953, 1966b), and Southern (1914). Most of the figures have been simplified or modified for similarity of style.

TABLE 1, FIG. A–I.



Family	Appendages of the anterior end	Setae
APHRODITIDAE Table 1, fig. A,B Page 22; Fig. 1	1 ant 1 pair palps 2 pair tC	notosetae spl neurosetae spl
POLYNOIDAE Table 1, fig. C,D Page 23; Fig. 2–5	3 ant 1 pair palps 2 pair tC	notosetae spl or absent neurosetae spl
POLYODONTIDAE Table 1, fig. E Page 32; Fig. 6a–c	0–3 ant 1 pair palps 1–2 pair tC	notosetae spl neurosetae spl or cpd
SIGALIONIDAE Table 1, fig. F Page 33; Fig. 6d–o	1–3 ant 1 pair palps 2 pair tC	notosetae spl neurosetae cpd [few sometimes spl]
EULEPETHIDAE[1] Table 1, fig. G	3 ant 1 pair palps 2 pair tC	notosetae spl neurosetae spl
PISIONIDAE† Table 1, fig. H Page 35	0–2 ant 1 pair palps 2 pair tC	notosetae absent neurosetae spl and cpd, or absent
PALMYRIDAE[2] Table 1, fig. I	1 ant 1 pair palps 2 pair tC	notosetae spl neurosetae spl

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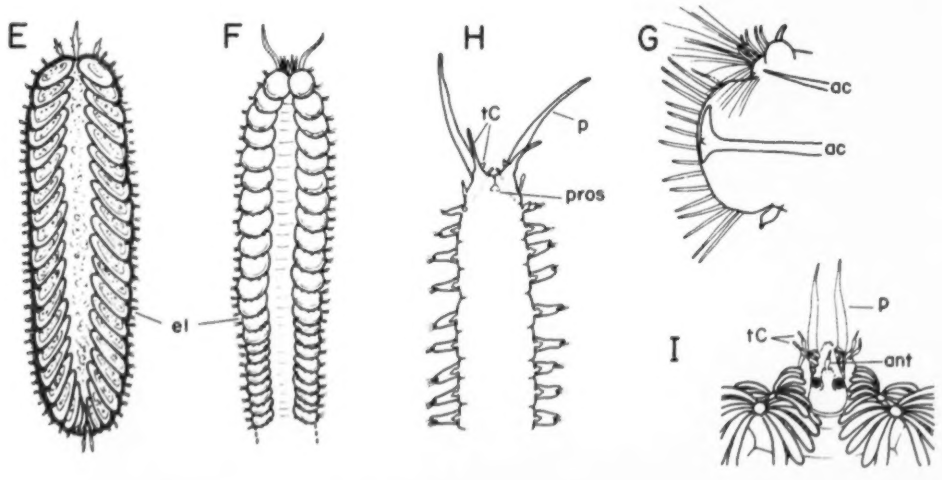
[1] The Eulepethidae are not known from the cold-temperate North Pacific. Reference: PETTIBONE (1969b).

[2] The Palmyridae are not known from the cold-temperate North Pacific. References: CHAMBERLIN (1919); HARTMAN (1954b).

TABLE 1, FIG. A–I (*cont.*)



Other diagnostic characters

Often with dorsal feltage partly
or entirely concealing elytra
(as in Table 1, fig. A,B)

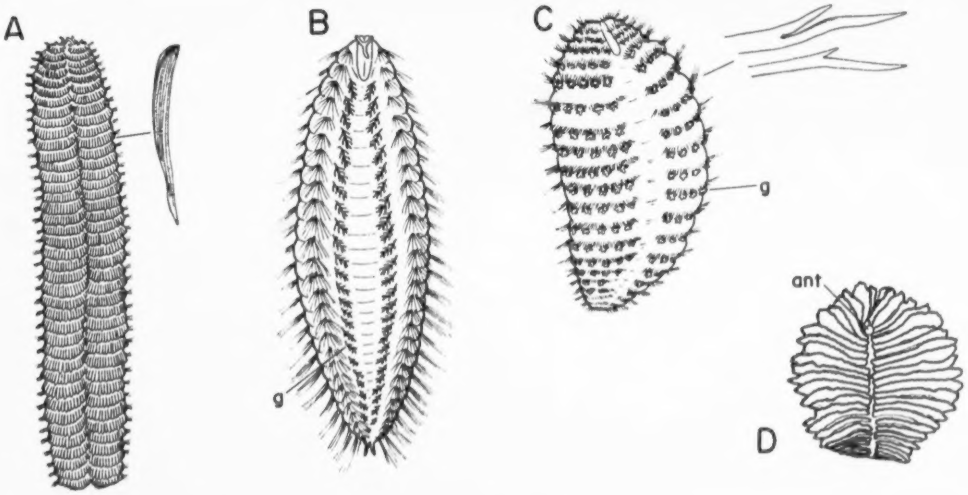
Dorsum bearing elytra
[=Superfamily APHRODITOIDEA,
see key on page 21]

Neuropodial acicula distally
flattened (as in Table 1, fig. G)

Prostomium usually greatly reduced (as in Table 1, fig. H)
dC and vC small

Dorsal cirri on alternate segments throughout most of body
Dorsum nearly concealed by broad flat notosetae (as in Table 1, fig. I)

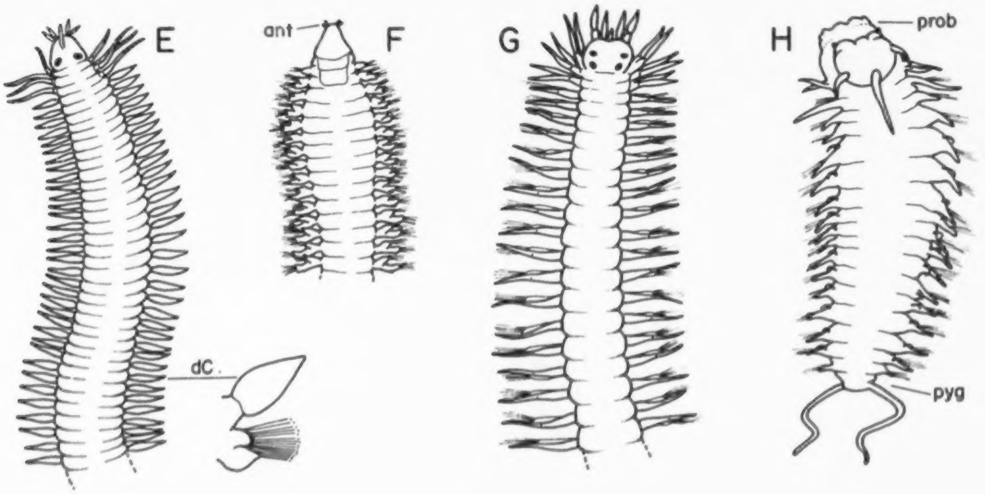
TABLE 2, FIG. A–H



Family	Appendages of the anterior end	Setae
CHRYSOPETALIDAE Table 2, fig. A Page 35; Fig. 7a	3 ant 1 pair palps 1–4 pair tC	notosetae spl neurosetae cpd
AMPHINOMIDAE Table 2, fig. B Page 36; Fig. 7b–e	3 ant 1 pair palps	notosetae spl neurosetae spl
EUPHROSINIDAE Table 2, fig. C Page 37; Fig. 7f–i	3 ant 1 pair palps	notosetae spl neurosetae spl
SPINTHERIDAE† Table 2, fig. D Page 38	1 ant	notosetae spl neurosetae cpd
PHYLLODOCIDAE Table 2, fig. E Page 38; Fig. 8–10	4–5 ant 2–4 pair tC	notosetae usually absent neurosetae cpd [few sometimes spl]
LACYDONIIDAE[3] Table 2, fig. F	4 ant	notosetae spl neurosetae cpd [few sometimes spl]
HESIONIDAE Table 2, fig. G Page 47; Fig. 11	2–3 ant 0–1 pair palps 2–8 pair tC	notosetae spl or absent neurosetae cpd
PILARGIDAE Table 2, fig. H Page 49; Fig. 12	0–3 ant 0–1 pair palps 0–2 pair tC	notosetae spl [few] or absent neurosetae spl

[3] The Lacydoniidae are not known from the cold–temperate North Pacific. Reference: DAY (1967).

TABLE 2, FIG. A–H. (*cont.*)



Other diagnostic characters

Dorsum nearly concealed by broad flat notosetae [except in *Dysponetus*†]
Setae transversely barred

With pair of branched gills on few [anterior] to many setigers (as in Table 2, fig. B)

All setae forked

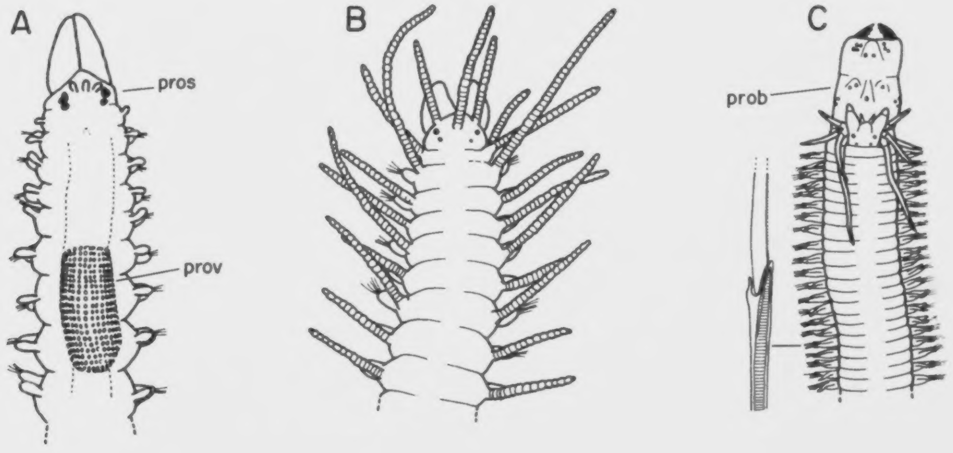
Animals appearing bristly [notopodia extending onto dorsum (as in Table 2, fig. C,D)]

Dorsal cirri well developed, flattened and leaflike (as in Table 2, fig. E), sometimes nearly covering dorsum

Proboscis muscular, oval or cylindrical

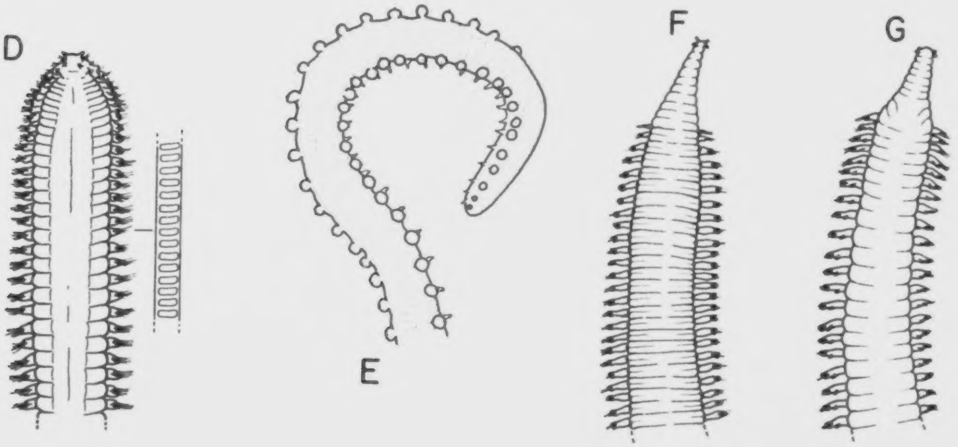
Body as in Table 2, fig. H, ribbon-like, or cylindrical with inflated anterior end and inconspicuous parapodia

TABLE 3, FIG. A–G.



Family	Appendages of the anterior end	Setae
SYLLIDAE Table 3, fig. A,B Page 51; Fig. 13–17	3 ant 1 pair palps [may be fused] 1–2 pair tC [3 in sexual stages of some *Autolytus* spp.]	notosetae absent [spl in sexual forms] neurosetae cpd [rarely spl or pscp]
NEREIDAE Table 3, fig. C Page 66; Fig. 18	2 ant [absent in *Micronereis*] 1 pair palps [small or absent in *Micronereis*] 3–4 pair tC	notosetae cpd [rarely absent] neurosetae cpd
NEPHTYIDAE Table 3, fig. D Page 72; Fig. 19	4 ant	notosetae spl neurosetae spl
SPHAERODORIDAE Table 3, fig. E Page 75; Fig. 20	[Several elongate papillae may represent appendages]	notosetae absent neurosetae spl and/or cpd
GLYCERIDAE Table 3, fig. F Page 77; Fig. 21	4 ant	notosetae spl or absent neurosetae cpd
GONIADIDAE Table 3, fig. G Page 79; Fig. 22	4 ant	notosetae absent ant'ly; spl post'ly neurosetae cpd

TABLE 3, FIG. A-G. (*cont.*)



Other diagnostic characters

With proventricle [often visible through body wall (as in Table 3, fig. A)]

With 2 large dark jaws (as in Table 3, fig. C)
Shafts of setae usually transversely barred (as in Table 3, fig. C) [indistinct in *Micronereis*]

Body squarish in cross-section
With some fenestrated setae (as in Table 3, fig. D) at least ant'ly
Interramal cirri (as in Fig. 19a,k) in most parapodia

Dorsum with 2 (as in Table 3, fig. E) or more (as in Fig. 20b) longitudinal rows of spherical capsules

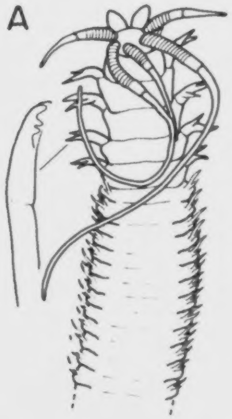
With 4 large dark jaws (as in Fig. 21d)

With 2 large dark jaws plus varying numbers of smaller jaws (as in Fig. 22d)

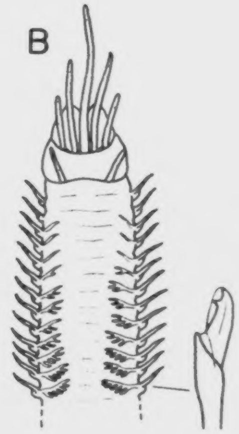
} Prostomium annulated
[=Superfamily GLYCEROIDEA, see key on page 77]

TABLE 4, FIG. A–G.

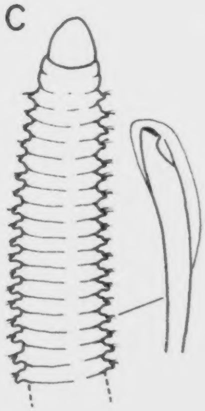
A



B



C

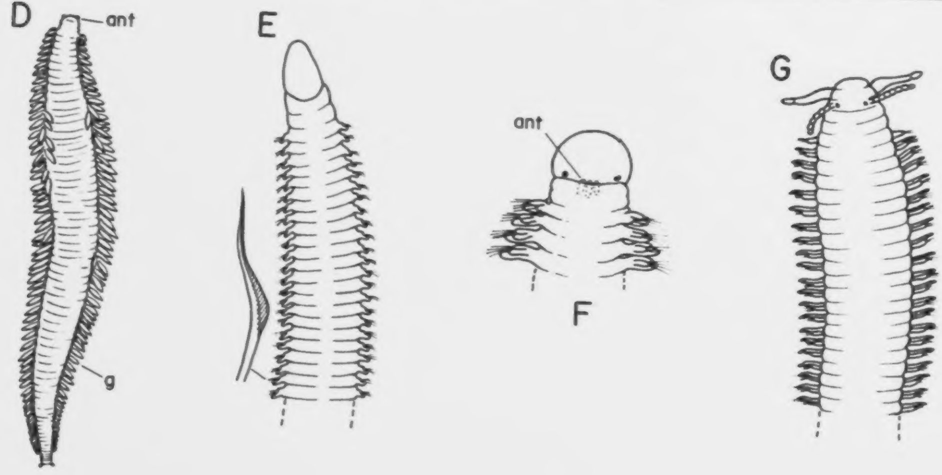


Family	Appendages of the anterior end	Setae
ONUPHIDAE Table 4, fig. A Page 82; Fig. 23a–j	7 ant 1 pair palps 0–1 pair tC	notosetae absent neurosetae spl [few usually pscp ant'ly]
EUNICIDAE Table 4; fig. B Page 85; Fig. 23k–m	1, 3, or 5 ant 1 pair palps 0–1 pair tC	notosetae absent neurosetae spl and cpd
LUMBRINERIDAE Table 4, fig. C Page 86; Fig. 24	absent	notosetae absent neurosetae spl [sometimes cpd ant'ly]
IPHITIMIDAE[4] Table 4, fig. D	2 ant	notosetae absent neurosetae spl and cpd
ARABELLIDAE Table 4, fig. E Page 88; Fig. 25	absent	notosetae absent neurosetae spl
LYSARETIDAE† Table 4, fig. F Page 90	3 ant	notosetae absent neurosetae spl
DORVILLEIDAE Table 4, fig. G Page 90; Fig. 26	2 ant 1 pair palps } [small or absent in *Ophryotrocha*]	notosetae absent [in genera treated] neurosetae spl and cpd

---

[4] The Iphitimidae are not known from the cold-temperate North Pacific. Reference: PILGER (1971).

TABLE 4, FIG. A–G. (*cont.*)



Other diagnostic characters	
Ceratophores of 5 antennae usually annulated (as in Table 4, fig. A) With hooded hooks (as in Table 4, fig. A) ant'ly	Dark jaw apparatus of ventral paired mandibles and dorsal maxillae of several paired pieces (as in Fig. 25c) [=Superfamily EUNICOIDEA, see key on page 81]
Often with hooded hooks (as in Table 4, fig. B)	
With hooded hooks (as in Table 4, fig. C or Fig. 24h)	
Only found in branchial cavities of decapod crustaceans	
All setae [except acS] limbate capillaries (as in Table 4, fig. E)	

KEYS

APHRODITOIDEA

Table 1, fig. A–G; Fig. 1–6
Hartman (1939); Pettibone (1953)

The first pair of elytra occurs on segment 2; the first pair of dorsal cirri, if dorsal cirri are present, occurs on segment 3 (see Fig. 5k, 6a). Elytra are never found on segments bearing dorsal cirri. If the elytra have become detached, the pairs of elytrophores (see Fig. 2i, 5*l*, 6a) may be counted. Always check the *entire* body when determining the arrangement of the elytra.

1 Elytra entirely (as in Table 1, fig. A) or partly (as in Table 1, fig. B) concealed by long capillary notosetae, often woven with mud or debris into dorsal feltage (as in Table 1, fig. A) .... APHRODITIDAE

Elytra not concealed by long capillary notosetae (see Table 1, fig. C–F) 2

2 Neuropodial acicula distally expanded (as in Table 1, fig. G) .... EULEPETHIDAE†

Neuropodial acicula not distally expanded 3

3 Elytra on alternate segments anteriorly, on every segment after segment 23–29. Neurosetae compound [a few upper neurosetae may be simple] .... SIGALIONIDAE

Elytra not on every segment after segment 23–29. Neurosetae simple or compound 4

4 Segment 1 with few or no setae (as in Fig. 5k). Elytra on alternate segments anteriorly [first 23 segments]; absent or arrangement variable posteriorly. Neurosetae simple .... POLYNOIDAE

Segment 1 often with many setae (as in Fig. 6a). Elytra on alternate segments throughout body. Neurosetae simple or compound .... POLYODONTIDAE

APHRODITIDAE

Table 1, fig. A,B; Fig. 1

Hartman (1939); Pettibone (1953, 1966a)

Protective notosetae, when present, are stout, dark, and often protrude through the dorsal feltage (see Table 1, fig. A).

1 Dorsal feltage compact, completely concealing elytra (as in Table 1, fig. A). Tip of protective notoseta entire (as in Fig. 1c) .... *Aphrodita*

Dorsal feltage loose or absent, not concealing elytra (see Table 1, fig. B). Tip of protective notoseta barbed, harpoon-like (as in Fig. 1f) [check elytra-bearing segments] .... *Laetmonice*

Aphrodita Linnaeus

1 Palps 8–11 times length of prostomium. All neurosetae with hairy tips .... *A. longipalpa* Essenberg

Palps 4–7 times length of prostomium (as in Fig. 1a). Neurosetae with or without hairy tips 2

2 Body small, 5–24 mm long, with about 27 segments. Lowermost neurosetae spurred (Fig. 1d) .... *A. parva* Moore

Body large, 30–220 mm long, with 38–43 segments. Neurosetae not spurred (see Fig. 1b,e) [some lower neurosetae in posterior parapodia may have several small teeth] 3

3 Protective notoseta rough near tip (Fig. 1c). Facial tubercle longer than prostomium; median antenna club-shaped, much shorter than prostomium .... *A. negligens* Moore

Protective notoseta smooth. Facial tubercle shorter than prostomium; median antenna at least as long as prostomium (as in Fig. 1a) 4

4 Lowermost notosetae coppery or gold. Neurosetae sometimes with rough or hairy tips (Fig. 1b). (See also Fig. 1a) .... *A. japonica* Marenzeller

Lowermost notosetae brilliant green. Neurosetae smooth (Fig. 1e) .... *A. refulgida* Moore*

(See Hartman 1968; Hartman and Reish 1950)

*Aphrodita refulgida** may be a synonym of *A. japonica* according to Pettibone (1953).

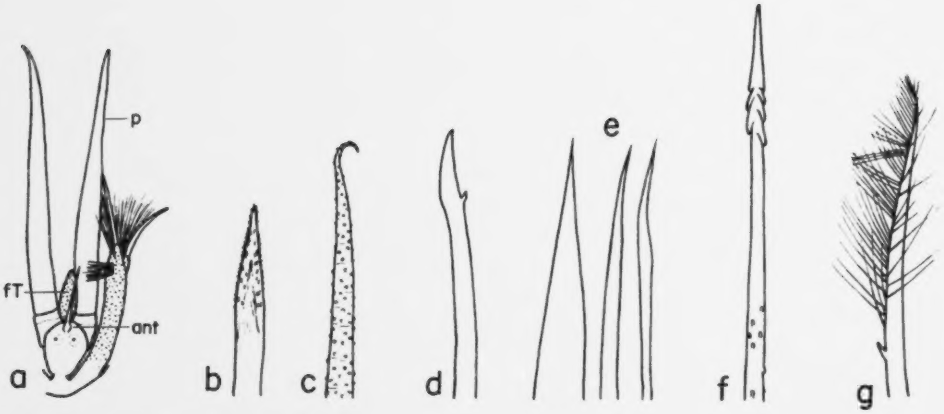


FIG. 1. APHRODITIDAE: *Aphrodita japonica*: a, anterior end, dorsal view; b, tip of neuroseta. *A. negligens*: c, tip of protective notoseta. *A. parva*: d, lower neuroseta. *A. refulgida**: e, tips of upper, middle, and lower neurosetae. *Laetmonice pellucida*: f, protective notoseta; g, neuroseta. Sources: a, b, Pettibone (1953); c, CPF; d, Moore (1905); e, Moore (1910); f, g, Moore (1903) [a, modified].

Laetmonice Kinberg

Body 26–30 mm long, with 33 setigers. No dorsal feltage. Protective notosetae rough; tip with 2–4 barbs on each side (Fig. 1f). Neurosetae spurred (Fig. 1g) .... *L. pellucida* Moore

(See HARTMAN 1968; BERKELEY 1966)

POLYNOIDAE

Table 1, fig. C,D; Fig. 2-5

PETTIBONE (1953)

See page 21 for aid in determining the number and arrangement of elytra. The ornamentation of the elytra also is important. Soft cylindrical papillae may form a marginal fringe (as in Fig. 3h) or spread over part or all of the elytral surface (as in Fig. 3b). Occasionally, papillae may be large and globular (as in Fig. 4b). Chitinized tubercles, which are variable in shape, often are classified by size as macrotubercles (see Fig. 2j) or microtubercles (see Fig. 4h).

1 Lateral antennae minute, scarcely visible .... *Macellicephala*†

Lateral antennae well developed (as in Fig. 3c) 2

2 With 12–15 pairs of elytra 3

With more than 15 pairs of elytra 14

3	With 12 pairs of elytra	*Lepidonotus*
	With 15 [rarely 13 or 14] pairs of elytra	4
4	Body with less than 50 segments. Last 18 or fewer segments without elytra	5
	Body with at least 45 segments. Last 18 or more segments without elytra (as in Table 1, fig. D)	13
5	Some or all notosetae with capillary tips (as in Fig. 3a)	6
	All notosetae with blunt (as in Fig. 4d) or abruptly pointed (as in Fig. 4g) tips	9
6	Some or all neurosetae bidentate	7
	All neurosetae unidentate	8
7	Few upper notosetae with blunt tips; remaining notosetae with capillary tips	*Arcteobea*†
	All notosetae with capillary tips	*Tenonia*
8	Neurosetae without capillary tips (as in Fig. 3e, f, j, k)	*Gattyana*
	Upper neurosetae with capillary tips (as in Fig. 4m)	*Hesperonoe*
9	Notosetae finer than neurosetae and few in number	*Parahalosydna*†
	Notosetae at least as stout as neurosetae	10
10	Some or all neurosetae with capillary tips	11
	Neurosetae without capillary tips	12
11	Notosetae with distinct spinous rows; at least 10 setae in notopodium. Middorsum covered by elytra	*Antinoella*
	Notosetae smooth, or with indistinct spinous rows; 5–9 setae in notopodium. Middorsum not covered by elytra	*Melaenis*†
12	Some or all neurosetae bidentate (as in Fig. 4i)	*Harmothoe*
	Neurosetae unidentate	*Eunoe*

13 Body long and slender [45 to over 100 segments; length 8–17 times greatest width, excluding setae]. Setae with or without capillary tips. Notopodium often with less than 10 setae .... *Polynoe*

Body not long and slender [45–65 segments; length 6–8 times greatest width, excluding setae] (see Table 1, fig. D). Setae without capillary tips. Notopodium with more than 10 setae .... *Hermadion*

14 With 16 pairs of elytra .... *Arctonoella*†

With at least 18 pairs of elytra 15

15 Each segment, after segment 38, bearing elytra. With large flap projecting over posterior part of prostomium (as in Fig. 5a) .... *Hololepida*

Some segments, after segment 38, without elytra. Without flap projecting over prostomium 16

16 Lateral antennae inserted ventrally (as in Fig. 3c) or subterminally (as in Fig. 3g) on prostomium 17

Lateral antennae inserted terminally, continuous with prostomium (as in Fig. 5g) 18

17 Notosetae with blunt, often notched, tips (as in Fig. 2d), or notosetae lacking. Spinous rows on neurosetae indistinct (as in Fig. 2e, f). After about segment 30, 1 segment bearing elytra alternating with 1 segment bearing dorsal cirri; or sequence irregular .... *Arctonoe*

Notosetae with pointed unnotched tips (as in Fig. 5i). Spinous rows on neurosetae distinct (as in Fig. 5j). After about segment 30, 2 segments bearing elytra alternating with 2 segments bearing dorsal cirri; or sequence irregular. [Characters apply only to North Pacific species] .... *Polyeunoa*

18 With 18 [rarely 19] pairs of elytra .... *Halosydna*

With more than 30 pairs of elytra .... *Lepidasthenia*

Antinoella Augener

Anterior pair of eyes often much larger than posterior pair. Prostomial peaks often reduced. Neurosetae with fine hairs at tips (Fig. 2a) ....
A. macrolepida (Moore)
(*Antinoe*† *macrolepida* in CPF, see also Hartman 1968)

Arctonoe Chamberlin

1 Upper neurosetae straight with blunt, often notched, tips (Fig. 2e); lower neurosetae strongly hooked, with pointed tips (Fig. 2f). Segment 8 [sometimes also 7] usually with brownish dorsal band .... *A. vittata* (Grube)

All neurosetae strongly hooked, with pointed tips (as in Fig. 2f). Segment 8 without brownish dorsal band 2

2 Elytral margin strongly frilled (Fig. 2b) .... *A. fragilis* (Baird)

Elytral margin smooth or slightly undulating (Fig. 2c). (See also Fig. 2d) .... *A. pulchra* (Johnson)

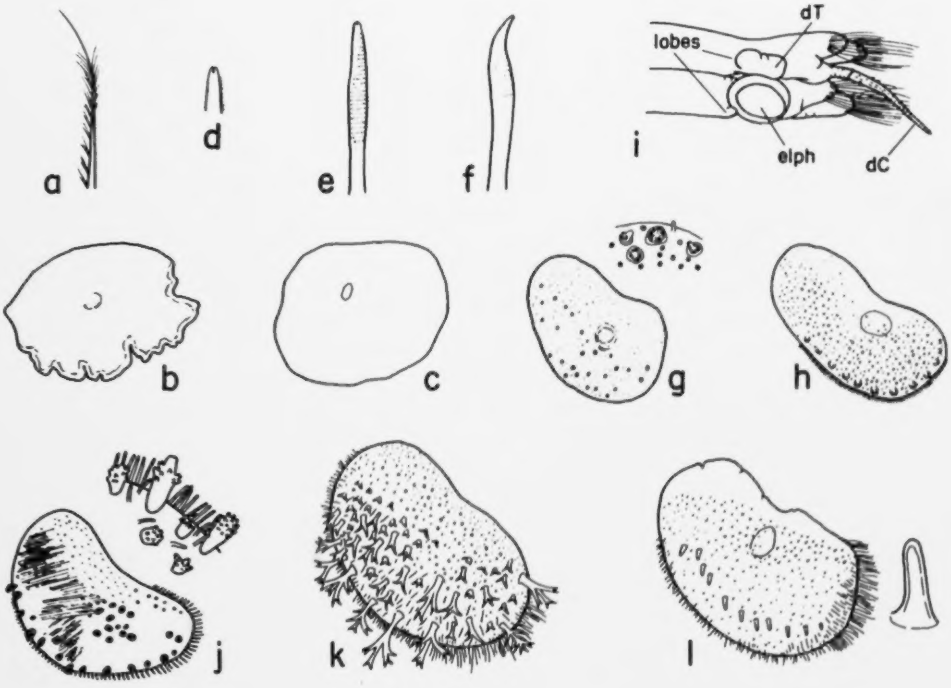


FIG. 2. POLYNOIDAE: *Antinoella macrolepida*: a, tip of neuroseta. *Arctonoe fragilis*: b, elytron. *A. pulchra*: c, elytron; d, tip of notoseta. *A. vittata*: e, upper neuroseta; f, lower neuroseta. *Eunoe depressa*: g, elytron and part of posterior elytral margin. *E. nodosa*: h, elytron; i, portion of two segments, dorsal view. *E. oerstedi*: j, elytron and part of posterior elytral margin. *E. senta*: k, elytron. *E. uniseriata*: *l*, elytron and macrotubercle. Sources: a, Moore (1905); b–g, j, Pettibone (1953); h, i, Pettibone (1963); k, CPF; *l*, Banse and Hobson (1968) [b–f, h–j, *l*, modified].

Eunoe Malmgren

1 Elytral margin smooth; macrotubercles brownish, arising from round, slightly elevated brown spots (Fig. 2g) .... *E. depressa* (Moore)
(See Pettibone 1953)

Elytral margin fringed 2

2 Elytral macrotubercles unbranched, in single row (as in Fig. 2h,*l*) 3

Elytral macrotubercles branched, distribution variable (as in Fig. 2j,k) 4

3 Elytral macrotubercles nodular, rough (Fig. 2h). Elytrophores and dorsal tubercles with extra rounded lobes on inner sides (Fig. 2i) .... *E. nodosa* (Sars)
(See Pettibone 1954; Berkeley and Berkeley 1956)

Elytral macrotubercles bluntly conical, smooth (Fig. 2*l*). Elytrophores and dorsal tubercles without extra lobes on inner sides .... *E. uniseriata* Banse and Hobson
(See Banse and Hobson 1968)

4 Elytral macrotubercles knob-like, with short branches (Fig. 2j). Some notosetae with pointed tips, some with truncate tips (similar to Fig. 4k) .... *E. oerstedi* Malmgren
(*E. barbata* Moore in CPF, see Pettibone 1953)

Elytral macrotubercles antler-like, with long branches (Fig. 2k). All notosetae with pointed tips .... *E. senta* (Moore)
(*Gattyana senta* in CPF, see also Hartman 1968)

Gattyana McIntosh

Harmothoe pacifica **Johnson was referred to *Gattyana* by Hartman (1965b); however, we regard this species as indeterminable because the elytra were missing from the only known specimen.**

1 Lateral antennae inserted subterminally (Fig. 3g). Elytra with large polygonal areas (Fig. 3h) .... *G. iphionelloides* (Johnson)

Lateral antennae inserted ventrally (as in Fig. 3c). Elytra without large polygonal areas 2

2 Elytra with bluntly conical macrotubercles (Fig. 3b). All notosetae with capillary tips (Fig. 3a) .... *G. ciliata* Moore

Elytra without macrotubercles. Upper notosetae with blunt tips; lower notosetae with capillary tips 3

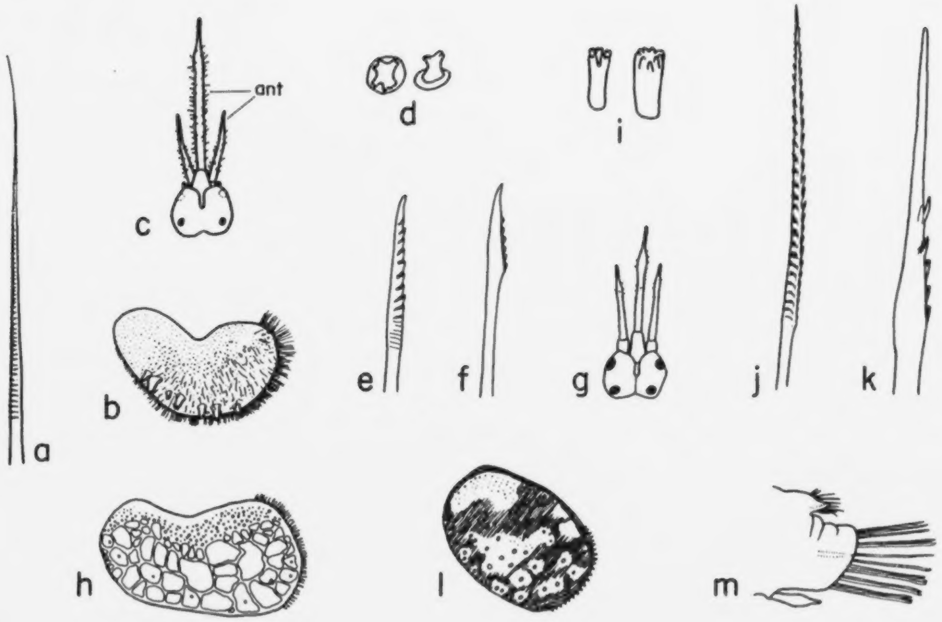


FIG. 3. POLYNOIDAE: *Gattyana ciliata*: a, notoseta; b, elytron. *G. cirrosa*: c, prostomium, dorsal view; d, elytral microtubercles, dorsal and lateral views; e, upper neuroseta; f, lower neuroseta. *G. iphionelloides*: g, prostomium, dorsal view; h, elytron. *G. treadwelli*: i, elytral microtubercles; j, upper neuroseta; k, lower neuroseta. *Halosydna brevisetosa*: *l*, first elytron; m, 25th parapodium. Sources: a, b, Moore (1902); c–i, k–m, Pettibone (1953); j, original [a–i, k, modified].

3 Upper neurosetae with relatively short spinous regions and stout tips (Fig. 3e). Lower neurosetae with bare tips equal to or shorter than spinous regions (Fig. 3f). Elytral microtubercles with 1–4 prongs (Fig. 3d). (See also Fig. 3c) .... *G. cirrosa* (Pallas)

Upper neurosetae with long spinous regions and slender sharp tips (Fig. 3j). Lower neurosetae with bare tips longer than spinous regions (Fig. 3k). Elytral microtubercles with 1–8 or more prongs (Fig. 3i) .... *G. treadwelli* Pettibone
(See PETTIBONE 1953)

In small [less than 15 mm long] specimens, some neurosetae are weakly bidentate and the number of prongs on the elytral microtubercles does not exceed 4.

Halosydna Kinberg

Notosetae short (Fig. 3m). First few pairs of elytra (Fig. 3*l*) with microtubercles and bluntly conical macrotubercles [tubercles less conspicuous on commensal forms] .... *H. brevisetosa* Kinberg
(In CPF, see also PETTIBONE 1953 and HILLGER AND REISH 1970)

Harmothoe Kinberg

Lagisca Malmgren and *Malmgrenia* McIntosh are included in this genus. In the listed species, the prostomial peaks are distinct [in *H. lunulata* they may be distinct, indistinct, or lacking].

1 Anterior pair of eyes situated anteroventrally, beneath prostomial peaks (Fig. 4c) .... *H. imbricata* (Linnaeus)

(In CPF; *H. imbricata* and *H. hartmanae* Pettibone in Pettibone 1953, see Pettibone 1963)

Anterior pair of eyes situated dorsolaterally, often on broadest part of prostomium (as in Fig. 4f) 2

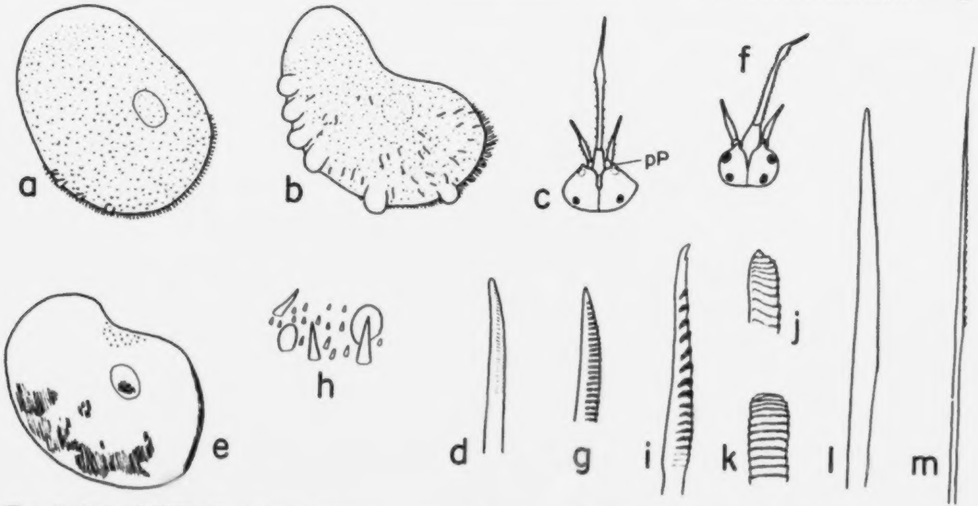


Fig. 4. POLYNOIDAE: *Harmothoe extenuata*: a, elytron. *H. fragilis*: b, elytron. *H. imbricata*: c, prostomium, dorsal view. *H. lunulata*: d, notoseta; e, elytron. *H. multisetosa*: f, prostomium, dorsal view; g, notoseta; h, elytral globular papillae and micro- and intermediate-sized tubercles; i, neuroseta. *Hermadion truncata*: j, tip of average notoseta; k, tip of stout notoseta. *Hesperonoe complanata*: *l*, stout notoseta; m, upper neuroseta. Sources: a, b, Moore (1910); c–g, i, m, Pettibone (1953); h, j, k, original; *l*, Johnson (1901) [c, e–g, i, *l*, m, modified].

2 Elytra nearly smooth; microtubercles, if present, only on anterior surface; without globular or marginal papillae; often with crescent-shaped pigment patch (Fig. 4e). Spinous rows on notosetae indistinct (Fig. 4d) .... *H. lunulata* (delle Chiaje)

(*H. lunulata* and *Malmgrenia nigralba* Berkeley in CPF, see *Malmgrenia lunulata* in Pettibone 1953)

Elytra with conical microtubercles nearly covering surface; with large globular papillae (as in Fig. 4a,b); pigmentation variable. Spinous rows on notosetae distinct (as in Fig. 4g) 3

3 Globular papillae narrow at base (Fig. 4a) .... *H. extenuata* (Grube)

(*H. triannulata* Moore and *Lagisca rarispina* Malmgren in CPF, see Pettibone 1953)

Globular papillae broad at base (as in Fig. 4b,h) 4

4 Elytra with intermediate-sized conical tubercles (Fig. 4h). (See also Fig. 4f,g,i) .... *H. multisetosa* (Moore)
(*Lagisca multisetosa* in CPF, see Pettibone 1953)

Elytra without intermediate-sized tubercles (Fig. 4b) .... *H. fragilis* Moore
(See Hartman 1968; Banse and Hobson 1968)

Hermadion Kinberg

Elytra appearing smooth, but with numerous scattered microtubercles; without marginal fringe. Tips of notosetae partially or entirely obscured by spinous rows (Fig. 4j,k); tips of stoutest notosetae truncate (Fig. 4k) .. *H. truncata* (Moore)

Hesperonoe Chamberlin

1 Spinous rows on stout notosetae indistinct or absent (Fig. 4*l*). Palps, antennae, and dorsal cirri sparsely papillated or smooth. (See also Fig. 4m) .... *H. complanata* (Johnson)

Spinous rows on stout notosetae distinct. Palps, antennae, and dorsal cirri heavily papillated .... *H. adventor* (Skogsberg)*
(See Hartman 1968)

Hololepida Moore

Eyes large (Fig. 5a). Notosetae smooth or nearly smooth, with capillary tips. Lower neurosetae bidentate, with distinct spinous rows (Fig. 5b) .... *H. magna* Moore

Lepidasthenia Malmgren

1 Elytra small, not covering middorsum. Notopodium short; neuropodium without ventral papillae (Fig. 5c). Two kinds of neurosetae: Slender, tapering to fine tips [upper]; stouter with spinous rows nearly obscuring bidentate tips [middle and lower (Fig. 5d)] .... *L. berkeleyae* Pettibone
(*Lepidametria*† *longicirrata*, in part, in CPF, see Pettibone 1953)
Lepidasthenia berkeleyae may be a commensal form of *L. longicirrata* (see Berkeley 1972).

Elytra large, nearly covering middorsum. Notopodium long; neuropodium with ventral row of globular papillae (Fig. 5e). Three kinds of neurosetae: slender, tapering to fine tips [upper]; stouter with bare bidentate tips [middle (Fig. 5f)] short, slender with weakly bidentate or unidentate tips [lower] .... *L. longicirrata* Berkeley
(*Lepidametria*† *longicirrata*, in part,
in CPF, see Pettibone 1953)

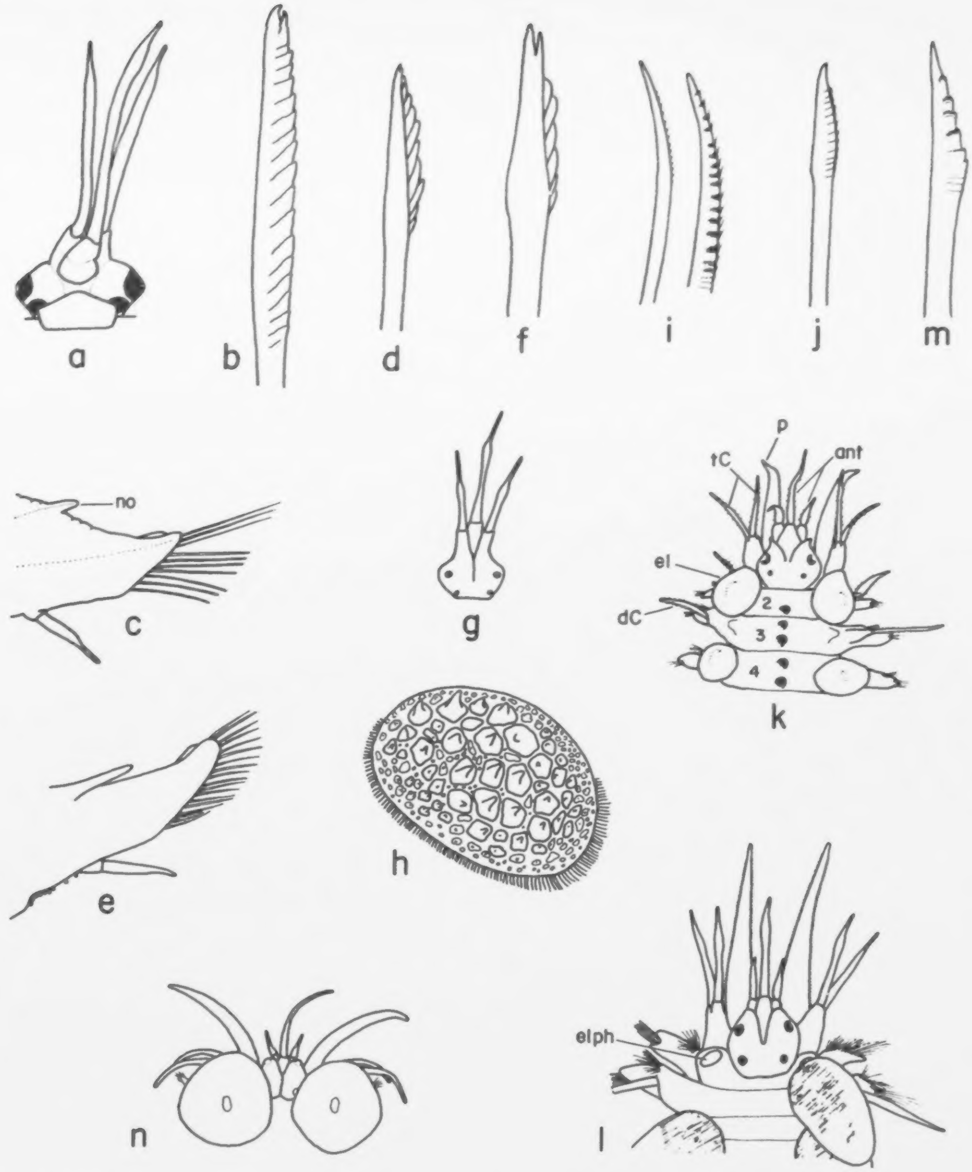


FIG. 5. POLYNOIDAE: *Hololepida magna*: a, prostomium, dorsal view; b, lower neuroseta. *Lepidasthenia berkeleyae*: c, median parapodium; d, middle neuroseta. *L. longicirrata*: e, median parapodium; f, middle neuroseta. *Lepidonotus squamatus*: g, prostomium, dorsal view; h, first elytron. *Polyeunoa tuta*: i, notosetae; j, neuroseta. *Polynoe canadensis*: k, anterior end, dorsal view. *P. gracilis*: *l*, anterior end, dorsal view; m, neuroseta. *Tenonia kitsapensis*: n, anterior end, dorsal view. Sources: a–g, i–m, Pettibone (1953); h, original; n, Nichols (1969) [a–e, g, i–n, modified].

Lepidonotus Leach

Elytra heavily fringed, with rounded or polygonal, yellow or dark amber macrotubercles. Tubercles of anterior (Fig. 5h) and posterior pairs of elytra raised in center; tubercles of middle pairs low and rounded. (See also Fig. 5g) .... *L. squamatus* (Linnaeus)
(*L. caelorus* Moore in CPF, see
Berkeley and Berkeley 1954)

Polyeunoa McIntosh

Elytra brownish medially, large, covering middorsum. Notopodium with at least 10 notosetae. (See also Fig. 5i,j) .... *P. tuta* (Grube)

Pettibone (1969a) based a new genus, *Grubeopolynoe*, on this species, characterizing it by the sequence of elytra after segment 34 [2 segments bearing elytra alternating with 2 segments bearing dorsal cirri]. We do not regard *Grubeopolynoe* as a valid genus, because, in local material of the type species, the arrangement of elytra after segment 34 is so irregular on some specimens that this generic character cannot be recognized.

Polynoe Savigny

Enipo Malmgren and *Nemidia* Malmgren are included in this genus. The listed species have eyes and have some neurosetae with abruptly pointed (as in Fig. 5m) or blunt tips.

1 All notosetae with capillary tips. With 2 prominent middorsal papillae on each segment (Fig. 5k). Elytra small, colorless .... *P. canadensis* (McIntosh)
(See *Enipo canadensis* in Pettibone 1953)

All notosetae with abruptly pointed or blunt tips. Without middorsal papillae. Elytra larger, brownish medially (Fig. 5*l*). (See also Fig. 5m) .... *P. gracilis* (Verrill)
(*Enipo cirrata* Treadwell in CPF, see
Enipo gracilis in Pettibone 1953)

Tenonia Nichols

Eyes large; anterior pair on anteroventral edge of prostomium (Fig. 5n). All setae slender .... *T. kitsapensis* Nichols
(See Nichols 1969)

POLYODONTIDAE
(ACOETIDAE in CPF)

Table 1, fig. E; Fig. 6a–c
Pettibone (1953)

1 Neurosetae compound. Without lateral antennae or dorsal cirri (see Fig. 6a). PEISIDICINAE .... *Peisidice*

Neurosetae simple. Usually with lateral antennae and dorsal cirri .... POLYODONTINAE†

Peisidice Johnson

Body with 36–49 segments. Elytra rigid, with concentric rings (Fig. 6b), not covering middorsum (see Table 1, fig. E). Blades of neurosetae short, smooth or finely toothed (Fig. 6c). (See also Fig. 6a) .... ***P. aspera*** **Johnson**

SIGALIONIDAE

Table 1, fig. F; Fig. 6d–o

Pettibone (1953, 1970b,c)

When present, gills are situated lateral to the elytrophore or dorsal tubercle (as in Fig. 6e,*l*). Parapodial ctenidia are situated between the gill and the notopodium and occasionally also medial to the ventral cirrus (as in Fig. 6e). Both structures may be absent in the anteriormost segments.

1 **Body small, usually shorter than 25 mm. Gills absent** .... ***Pholoe***

Body large, usually much longer than 25 mm. All [except some anterior] parapodia with slender gill (as in Fig. 6e,*l*) 2

2 **Median antenna usually absent** .... ***Sigalion*†**

Median antenna present 3

3 **Ceratophore of median antenna absent or small, without lateral appendages (as in Fig. 6d). Blades of compound neurosetae with bidentate or unidentate tips** 4

Ceratophore of median antenna well developed, with lateral appendages (as in Fig. 6k). Blades of compound neurosetae with bidentate or unidentate tips.... 5

4 **Median antenna without ceratophore. Few upper neurosetae simple, remainder compound** .... ***Thalenessa*†**

Median antenna with ceratophore (as in Fig. 6d). All neurosetae compound .... ***Euthalenessa*†**

5 **All neurosetae compound, with unidentate tips (as in Fig. 6f). Elytra without tubercles** .... ***Neoleanira****

Upper neurosetae simple, spinous; remainder compound, usually with bidentate tips (as in Fig. 6m–o). Elytra with microtubercles .... ***Sthenelais***

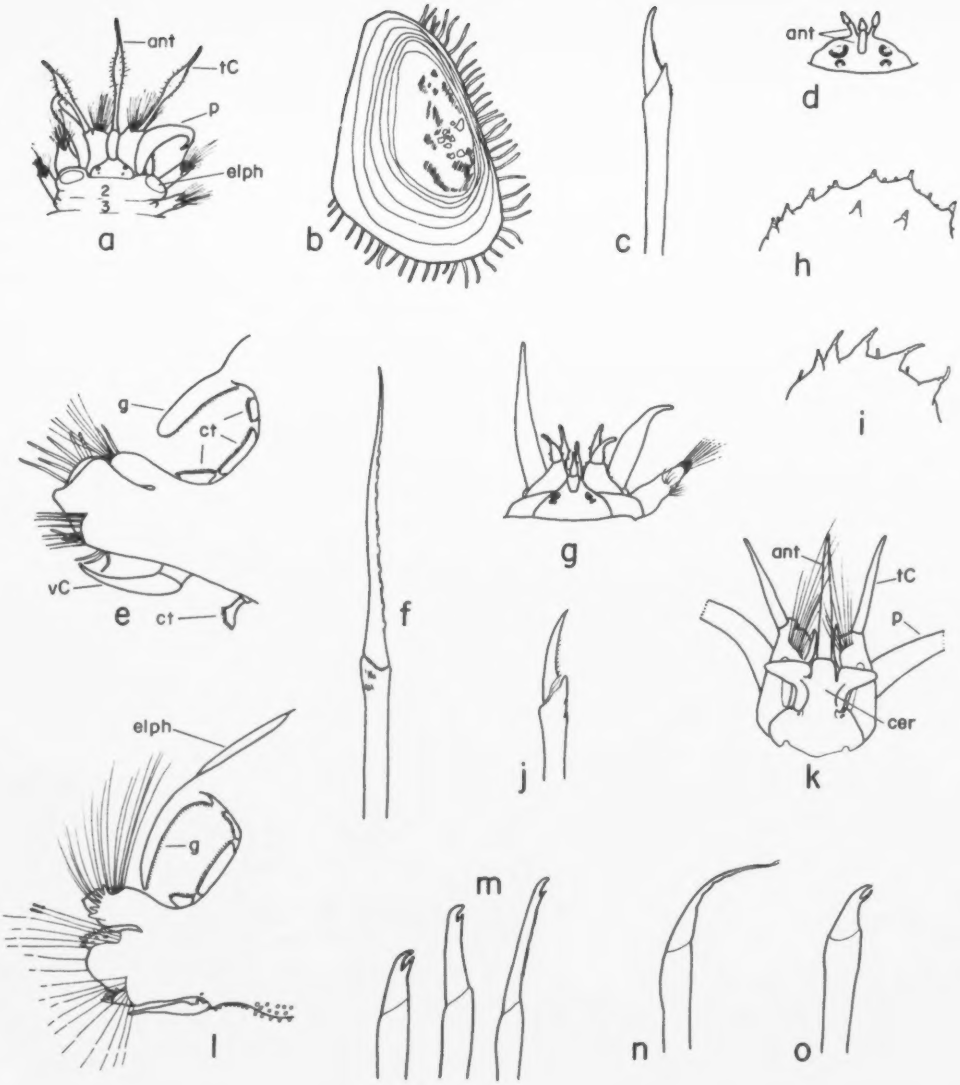


FIG. 6. POLYODONTIDAE: *Peisidice aspera*: a, anterior end, dorsal view; b, elytron; c, neuroseta. SIGALIONIDAE: *Euthalanessa*† sp.: d, prostomium, dorsal view. *Neoleanira areolata**: e, median parapodium, anterior view; f, neuroseta. *Pholoe minuta*: g, anterior end, dorsal view; h, i, elytral margins; j, neuroseta. *Sthenelais berkeleyi*: k, anterior end, dorsal view; *l*, approximately 25th parapodium; m, middle neurosetae. *S. tertiaglabra*: n, o, middle neurosetae. Sources: a–c, g, Pettibone (1953); d, Pettibone (1970b); e, Pettibone (1970c); f, Hartman (1960); h–j, n, o, original; k–m, Pettibone (1971) [a–d, f, g, k–m, modified].

Neoleanira Pettibone*

Gills spurred at base (Fig. 6e). Ventral ctenidia of median and posterior parapodia large, boot-shaped (Fig. 6e). (See also Fig. 6f) .... *N. areolata* (McIntosh)*

(See Pettibone 1970c)

Pholoe Johnston

With 2 pairs of eyes, sometimes coalesced (Fig. 6g). Elytra usually not covering middorsum anteriorly (see Table 1, fig. F). Elytral margin with jointed papillae (Fig. 6h,i). Upper notosetae short, strongly bent. Blades of neurosetae long (as in Fig. 6j) or shorter. With 40–84 segments .... *P. minuta* (Fabricius)

(*P. tuberculata* Southern in CPF, see Pettibone 1953)

Specimens, in which the middorsum is nearly covered by elytra, have elytral papillae that are larger relative to the size of the elytra (Fig. 6i) than specimens in which the middorsum is bare anteriorly (Fig. 6h).

Sthenelais Kinberg

1 Ventral surface of body papillated (Fig. 6*l*). Middle neurosetae of median parapodia with short, relatively stout bidentate blades (Fig. 6m). (See also Fig. 6k) .... *S. berkeleyi* Pettibone

(*S. fusca*† [not Johnson] in Pettibone 1953, see Pettibone 1971)

Ventral surface of body not papillated. Middle neurosetae of median parapodia with long, slender, minutely bidentate blades (Fig. 6n), except for 1 or 2 setae with short, stout bidentate blades (Fig. 6o) .... *S. tertiaglabra* Moore

(*S. articulata*† [not Kinberg] in CPF, see also *S. verruculosa*† [not Johnson] in Pettibone 1953; Banse et al. 1968)

The above synonymy for *S. tertiaglabra* was kindly supplied by Dr M. H. Pettibone (personal communication).

PISIONIDAE†

Table 1, fig. H

Day (1967); Hartman (1939)

Prostomium, without antenna, rudimentary between 2 projecting acicular setae (see Table 1, fig. H) .... *Pisione*†

CHRYSOPETALIDAE

Table 2, fig. A; Fig. 7a

Hartman (1961)

In the listed genera, the body is relatively short (as in Table 2, fig. A).

1 Notosetae slender, not covering dorsum .... *Dysponetus*†

Notosetae broad, flat, nearly covering dorsum (as in Table 2, fig. A) .... *Paleanotus*

Paleanotus Schmarda

Chrysopetalum Ehlers is included in this genus (*fide* Day 1967).

1 Upper notosetae broad, distally dilated; lower notosetae few, narrow, tapering distally (Fig. 7a). Dorsum without golden lustre. Dorsal and ventral cirri beaded (Fig. 7a) .... *P. bellis* (Johnson)
(*P. chrysolepis*† [not Schmarda] in CPF,
see also Banse and Hobson 1968)

All notosetae broad, distally dilated. Dorsum with golden lustre. Dorsal and ventral cirri not beaded .... *P. occidentale* (Johnson)*
(See *Chrysopetalum occidentale**
in Hartman 1968; Ushakov 1955)

AMPHINOMIDAE

Table 2, fig. B; Fig. 7b–e
Gustafson (1930); Hartman (1940)

Gills are branched and occur singly on the notopodium. The listed genera have only 1 [not 2] dorsal cirrus on the notopodium.

1 Gills pinnate [with main axis] (as in Table 2, fig. B). Caruncle long, folded (as in Fig. 7c) .... *Chloeia*

Gills bushy [without main axis] (as in Fig. 7e). Caruncle absent or small rounded pad (as in Fig. 7e) 2

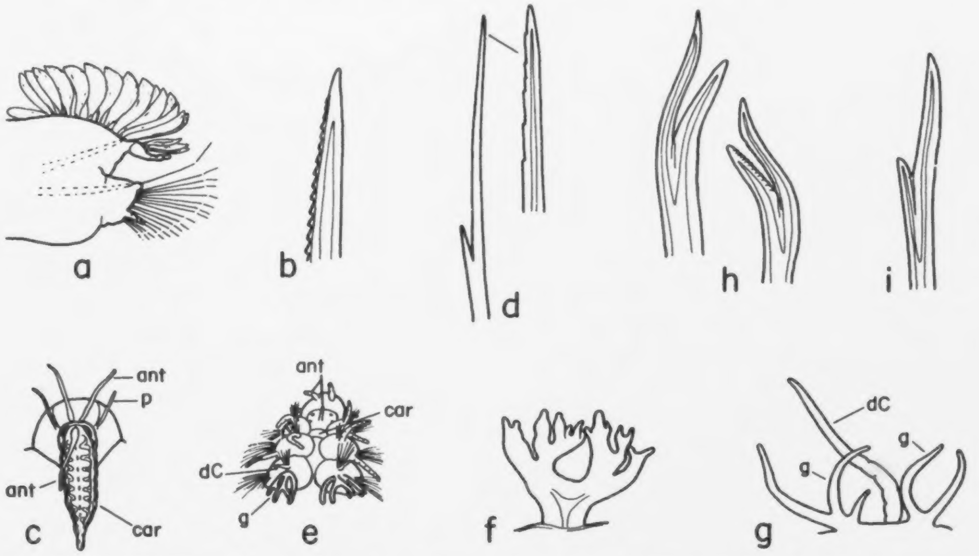


Fig. 7. CHRYSOPETALIDAE: *Paleanotus bellis*: a, parapodium. AMPHINOMIDAE: *Chloeia entypa*: b, tip of notoseta. *C. pinnata**: c, prostomium and caruncle, dorsal view; d, notoseta and tip. *Pseudoeurythoe*† sp.: e, anterior end, dorsal view. EUPHROSINIDAE: *Euphrosine arctia*: f, gill. *E. bicirrata*: g, gills. *E. heterobranchia*: h, i, notosetae. Sources: a, f, Johnson (1897); b–d, Hartman (1940); e, Imajima (1967b); g, Moore (1905); h, i, Johnson (1901) [a, e, f, h, i, modified].

2 Setiger 1 with 2 stout curved setae .... *Paramphinome*†

Setiger 1 without stout curved setae .... *Pseudeurythoe*†

Chloeia Savigny

The listed species are less than 40 mm in length; gills begin on setiger 4.

1 Forked notosetae of posterior region with distally directed serrations on longer branch (Fig. 7d). (See also Fig. 7c) .... *C. pinnata* Moore*
(See Hartman 1968; Hartman and Reish 1950)

Forked notosetae of posterior region with proximally directed serrations on longer branch (Fig. 7b) .... *C. entypa* Chamberlin
(See Hartman 1968; Nichols 1971)

Berkeley (1972) recorded *Notopygos*† *labiatus* McIntosh from British Columbia; however, an examination of the specimens indicates that they should be referred to *Chloeia entypa*.

EUPHROSINIDAE

Table 2, fig. C; Fig. 7f–i
Horst (1912)

This family was not recognized in the CPF; *Euphrosine*, the only known genus, was included in the Amphinomidae. The number of gills per notopodium and the number of branches per gill should be counted where the gills are best developed [usually on median segments]. Forked notosetae may have nearly equal branches [deeply cleft, as in Fig. 7h] or very unequal branches [spurred, as in Fig. 7i].

Euphrosine Savigny

1 Dorsum completely concealed by notosetae. All notosetae deeply cleft (as in Fig. 7h). Each median notopodium with 6-7 gills; gills usually bifid, occasionally simple or trifid (Fig. 7g) .... *E. bicirrata* Moore

Dorsum concealed by notosetae except for narrow longitudinal strip (as in Table 2, fig. C). Notosetae both deeply cleft (as in Fig. 7h) and spurred (as in Fig. 7i). Most gills with at least 3 branches (as in Fig. 7f) 2

2 Each median notopodium with 5 gills; gills knobbed at tips (Fig. 7f) .... *E. arctia* Johnson

Each median notopodium with at least 10 gills; gills not knobbed at tips 3

3 Each median notopodium with 10 gills. Deeply cleft notosetae of 2 kinds: smooth and serrated (Fig. 7h). (See also Fig. 7i) .... *E. heterobranchia* Johnson
(See JOHNSON 1901)

Each median notopodium with 11–13 gills. All deeply cleft notosetae serrated .... *E. hortensis* Moore

SPINTHERIDAE†

Table 2, fig. D
HARTMAN (1948); USHAKOV (1955)

As in Table 2 .... *Spinther*†

PHYLLODOCIDAE

Table 2, fig. E; Fig. 8-10
BERGSTRÖM (1914); USHAKOV (1972)

Descriptions of dorsal and ventral cirri refer to those of median segments (30th to 50th setigers). For the study of the shaft endings of the setae, only an oil immersion lens will suffice. Care must be taken to study setae exactly in plane (side) view, if not stated otherwise, so that only one major tooth, if any, can be seen on the end of the shaft.
Names of subgenera are used in the figure captions if subgeneric, as well as specific, characters are illustrated.

1 With 2 pairs of tentacular cirri on 1 segment (as in Fig. 8a) .... *Eteone*

With 3 or 4 pairs of tentacular cirri on more than 1 segment 2

2 With 3 pairs of tentacular cirri on 2 segments [ventral pair on segment 2 may be short, as in Fig. 9g]. Segment 3 without dorsal cirri 3

With 4 pairs of tentacular cirri on 3 (as in Fig. 9f), or apparently on 2 (as in Fig. 10e), segments [ventral pair can be leaf-like, as in Fig. 9i] 4

3 Segment 2 with setae and long ventral cirrus .... *Mystides*

Segment 2 with short broadened ventral cirrus. Setae beginning on segment 3 (as in Fig. 9g) .... *Hesionura*

4 Prostomium without median antenna, with (as in Fig. 10e) or without nuchal papilla .... *Phyllodoce*

Prostomium with median antenna (as in Fig. 9f) 5

5 Parapodium subbiramous (as in Fig. 9h). Ventral cirrus larger than setigerous lobe, with long axis strongly oblique to acicula (as in Fig. 9h) .... *Notophyllum*

Parapodium uniramous (as in Fig. 9b). Ventral cirrus smaller than, or same size as, setigerous lobe, with long axis approximately parallel to acicula (as in Fig. 9b), or larger than setigerous lobe, with long axis strongly oblique to acicula (as in Fig. 9h) .... *Eulalia*

Eteone Savigny

HARTMAN (1968); USHAKOV (1955)

The species of *Eteone* are very difficult to identify. Care must be taken to examine the parapodia in plane (side) view.
In the listed species, the posterior edge of the prostomium is approximately as wide as the following segment (as in Fig. 8a), unless otherwise stated. Setae and ventral cirri are present from segment 2 [setae may be lacking on this segment in *E. tuberculata*]. The dorsal or ventral cirri are not lanceolate (see Fig. 9e) or rectangular [with rounded corners.] The length of the dorsal cirrus does not reach twice the width.

1 Proboscis with marginal row of large papillae on each side of distal part (Fig. 8a). Dorsal tentacular cirri often nearly as long as body width .... Subgenus *Mysta*†

Proboscis without marginal rows of papillae. Subgenus *Eteone*.
Listed species with tentacular cirri about equal in length, distinctly shorter than body width 2

2 Dorsal cirrus markedly asymmetrical, wider than long (as in Fig. 8e). Ventral cirrus broad, same length as setigerous lobe 3

Dorsal cirrus approximately symmetrical, bluntly conical (as in Fig. 8d) instead of pointed or bluntly heart-shaped 4

3 Shaft of seta ending in 2 large unequal teeth [frontal view] (Fig. 8f). (See also Fig. 8e) .... *E. pacifica* Hartman
(*E. spetsbergensis* var. *pacifica* Berkeley and Berkeley in CPF, see BANSE 1972)

Shaft of seta ending in 2 equal teeth [frontal view]. (See also Fig. 8g) .... *E. spetsbergensis* Malmgren
(In CPF, see also BERGSTRÖM 1914)

4 Prostomium with narrow base (Fig. 8h). Axis of ventral cirrus oblique to acicula, cirrus shorter than setigerous lobe. Dorsal cirrus longer than wide (Fig. 8i) .... *E. tuberculata* Treadwell
(See BANSE 1972)

Prostomium with broad base (as in Fig. 8a). Axis of ventral cirrus approximately parallel to acicula 5

5 Dorsal cirrus longer than wide, conical. Ventral cirrus almost as long as setigerous lobe (Fig. 8d). Pygidial cirri broad, spheroidal ..... *E. longa* (Fabricius)

Dorsal cirrus wider than long, broadly rounded. Ventral cirrus shorter than setigerous lobe (Fig. 8b), very short in posterior parapodia (Fig. 8c). Pygidial cirri twice as long as wide .... *E. californica* Hartman*
(See HARTMAN 1948)

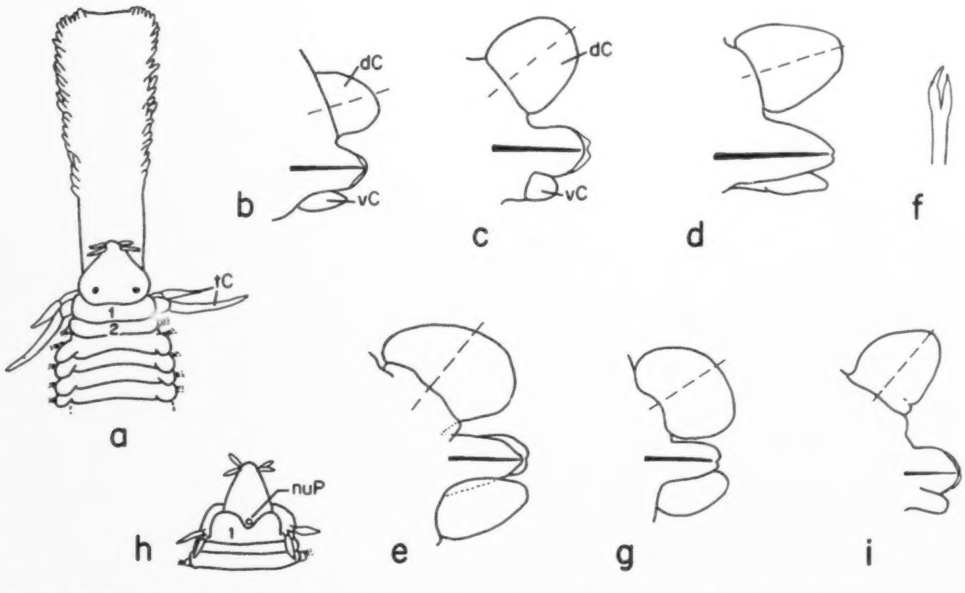


FIG. 8. PHYLLODOCIDAE [the broken lines through the dorsal cirri indicate the axes of the cirri]: *Eteone* (*Mysta*†) sp.: a, anterior end with everted proboscis, dorsal view. *Eteone californica**: b, median parapodium [setae omitted]; c, posterior parapodium [setae omitted]. *E. longa*: d, median parapodium [setae omitted]. *E. pacifica*: e, median parapodium [setae omitted]; f, shaft of seta, frontal view. *E. spetsbergensis*: g, median parapodium [setae omitted]. *E.* (*Eteone*) *tuberculata*: h, anterior end, dorsal view; i, median parapodium [setae omitted]. Sources: a, Ushakov (1955); b, Hartman (1936a); c, Hartman (1948); d, g, Bergström (1914); e, f, i, Banse (1972); h, Treadwell (1922) [all modified].

Eulalia Savigny

The tentacular cirri of listed species do not reach beyond segment 15.

1 Ventral cirrus clearly larger than setigerous lobe, with long axis oblique to acicula (as in Fig. 9h) 2

Ventral cirrus smaller than, or about equal to, setigerous lobe, with long axis approximately parallel to acicula (as in Fig. 9b) 3

2 Tentacular cirri with circular cross section. Subgenus *Bergstroemia* (see p. 93). Median antenna inserted between eyes .... *Eu. nigrimaculata* Moore
(In CPF, see also Banse 1973)

Tentacular cirri flattened, club-shaped .... Subgenus *Clavadoce*†

3 Ventral tentacular cirri on segment 2 relatively narrow, not over twice width of other tentacular cirri (see Fig. 9f). Listed species with setigerous lobe rounded [not pointed] above and below acicula (as in Fig. 9b,c). Proboscis smooth or diffusely papillated 4

Ventral tentacular cirri on segment 2 broad, leaf-like (as in Fig. 9i). Proboscis diffusely papillated 10

4 Segment 1 reduced dorsally (as in Fig. 10i). Proboscis smooth when fully extended or with warts [not papillae]. Subgenus *Eumida.*
Listed species with heart-shaped dorsal cirri, distally truncated (as in Fig. 9c) or pointed 5

Segments 1–3 distinct dorsally (as in Fig. 9f). Subgenus *Eulalia.*
Listed species with diffusely papillated proboscis 7

5 Dorsal cirrus truncate (Fig. 9c), wider than long even in posterior region; cirrophore on posterior segments distally wider than half width of cirrus .... *Eu. longicornuta* Moore
(See Moore 1906)

Dorsal cirrus pointed 6

6 Dorsal cirrus slightly longer than wide; difference greater posteriorly; cirrophore on posterior segments distally not wider than half width of cirrus. Prostomium longer than wide .... *Eu. sanguinea* Oersted

Dorsal cirrus as wide or slightly wider than long; cirrophore distally wider than half width of cirrus .... *Eu. tubiformis* Moore*
(See Ushakov 1955)

7 Dorsal cirrus oval (as in Fig. 9b) [not truncate or subrectangular to oval]. Setae beginning on segment 2 8

Dorsal cirrus lanceolate [not heart-shaped], pointed (as in Fig. 9e). Setae beginning on segment 2 or 3 9

8 Shaft of seta ending in spines of about equal width [side view] .... *Eu. bilineata* (Johnston)?

The Pacific form is perhaps specifically distinct from the European species (see Banse and Hobson 1968).

Shaft of seta ending in strong median tooth and small accessory teeth [side view] (Fig. 9a). (See also Fig. 9b) .... *Eu. levicornuta* Moore

(See Banse and Hobson 1968)

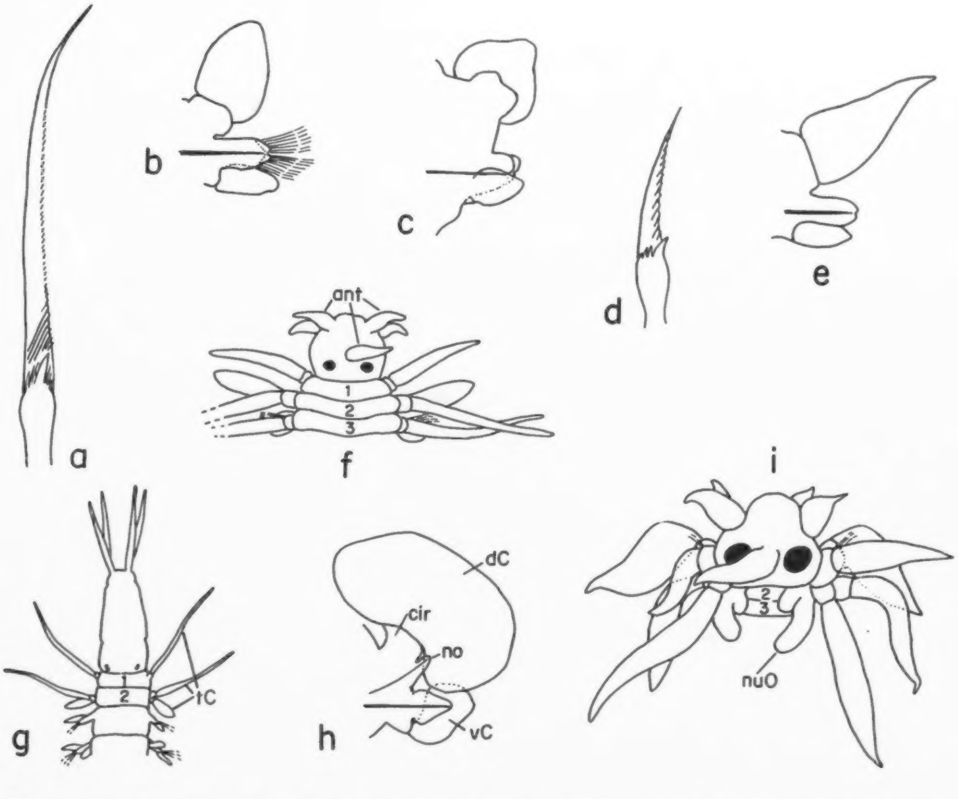


Fig. 9. PHYLLODOCIDAE: *Eulalia levicornuta*: a, seta; b, parapodium. *Eu. longicornuta*: c, median parapodium [setae omitted]. *Eu. parvoseta*: d, seta. *Eu. viridis*: e, median parapodium [setae omitted]. *Eu.* (*Eulalia*) sp.: f, anterior end, dorsal view [schematic]. *Hesionura coineaui difficilis*: g, anterior end of living specimen, dorsal view [prostomium and cirri contract upon preservation]. *Notophyllum imbricatum*: h, median parapodium [setae omitted]. *N. tectum*: i, anterior end, dorsal view [schematic]. Sources: a, b, d, Banse and Hobson (1968); c, i, Moore (1906); e, f, Bergström (1914); g, Banse (1963); i, Banse (1972) [a, c, e–i, modified].

9 Setae beginning on segment 2. Median antenna inserted between, or slightly anterior to, eyes. Shaft of seta ending in teeth of about equal width [side view]. (See also Fig. 9e) .... *Eu. viridis* Linnaeus

Setae beginning on segment 3. Shaft of seta ending in strong median tooth and small accessory teeth (as in Fig. 9a); blade short (as in Fig. 9d). Sometimes with small eye spot beside each eye .... *Eu. quadrioculata* Moore
(See Banse 1972)

10 Segments 1–3 distinct dorsally (as in Fig. 9f) .... Subgenus *Steggoa*†

Segment 1 reduced dorsally (as in Fig. 10i) 11

11 Segments 2 and 3 with setae .... Subgenus *Sige*†

Segments 2 and 3 without setae. Subgenus *Pterocirrus* 12

12 Prostomium heart-shaped [dorsal view]. Seta with long blade .... *Eu. macroceros* (Grube)
(In CPF, see also Banse and Nichols 1968)

Prostomium oval [dorsal view]. Seta with short blade (Fig. 9d) .... *Eu. parvoseta* Banse and Hobson
(See Banse and Hobson 1968)

Hesionura Hartmann–Schröder

Setae without long hairs on cutting edges of blades; blades of middle setae almost twice as long as those of upper and lower setae. (See also Fig. 9g) .... *H. coineaui difficilis* (Banse)
(See *Eteonides coineaui difficilis* in Banse 1963)

Mystides Théel

Dorsal cirrus rounded to oval [not elongated oval]. Setae with blades of uniform length within parapodia .... *M. borealis* Théel
(See Hartmann-Schröder 1963; Pettibone 1954)

Notophyllum Oersted

1 Ventral tentacular cirri on segment 2 slender. Subgenus *Notophyllum*.
Nuchal organs bi- or trilobed [rarely tetralobed], usually extending beyond segment 3. Notopodium not fused with dorsal cirrophore (Fig. 9h), usually with 1 or 2 simple setae. Median antenna longer than prostomium .... *N. imbricatum* Moore

Ventral tentacular cirri on segment 2 leaf-like (as in Fig. 9i). Subgenus *Hesperophyllum*.
Nuchal organs bilobed (Fig. 9i). Notopodium fused with dorsal cirrophore, occasionally with 1 or 2 simple notosetae resembling blades of neurosetae .... *N. tectum* (Chamberlin)
(See Banse 1972)

Phyllodoce Savigny

1 Nuchal papilla absent. Prostomium oval, with posterior margin straight (as in Fig. 10i). Segment 1 reduced dorsally. Setae beginning on segment 2. Subgenus *Genetyllis*.
Tentacular cirri somewhat flattened. Dorsal cirrus heart-shaped. Animals usually intensively rust- or yellow-brown .... *P. castanea* (Marenzeller)

Nuchal papilla present (as in Fig. 10e,j) 2

2 Segments 1 and 2 fused, with lateral collar-like expansion (as in Fig. 10j). Subgenus *Paranaitis*.
Prostomium oval, with posteriorly directed median lobe, with eyes (Fig. 10j). Dorsal cirrus large, kidney-shaped .... *P. polynoides* (Moore)

Segments 1 and 2 without lateral expansion; segment 1 dorsally reduced. Prostomium heart-shaped (as in Fig. 10e) 3

3 Proboscis short, diffusely papillated. Setae beginning on segment 2 .... Subgenus *Phyllodoce*[†]

Proboscis long, proximally with longitudinal rows of large papillae (as in Fig. 10e). Setae beginning on segment 3 [on segment 4 in *P. madeirensis*]. Subgenus *Anaitides*.
Listed species with rounded setigerous lobes, parts above and below acicula about same length (as in Fig. 10b [except in *P. multiseriata*]) 4

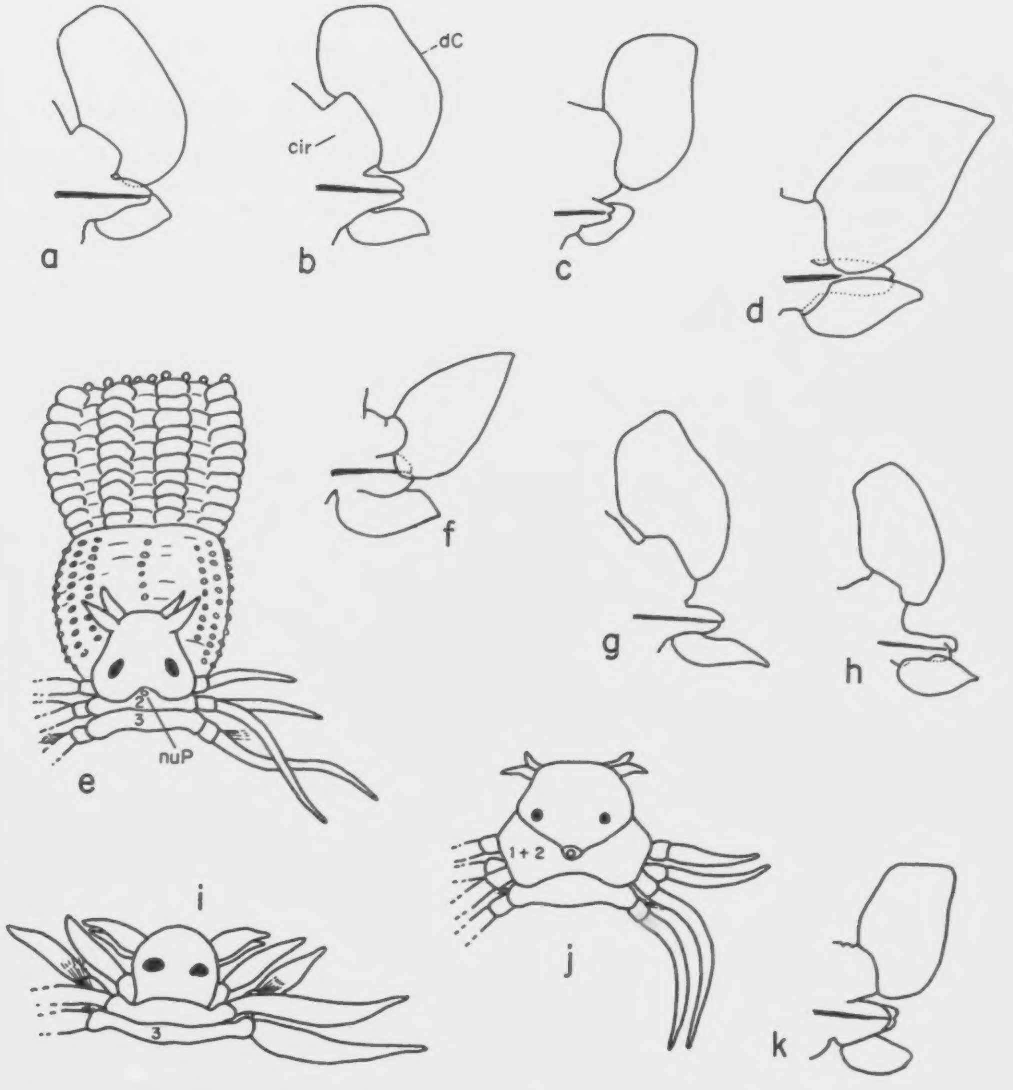


FIG. 10. PHYLLODOCIDAE: *Phyllodoce citrina*: a, median parapodium [setae omitted]. *P. groenlandica*: b, median parapodium [setae omitted]. *P. maculata*: c, median parapodium [setae omitted]. *P. madeirensis*: d, median parapodium [setae omitted]. *P. medipapillata**: e, anterior end, dorsal view [schematic]; f, anterior parapodium [setae omitted]. *P. mucosa*: g, median parapodium [setae omitted]. *P. (Anaitides) multiseriata*: h, medioposterior parapodium [setae omitted]. *P. (Genetyllis)* sp.: i, anterior end, dorsal view [schematic]. *P. (Paranaitis) polynoides*: j, anterior end, dorsal view [schematic]. *P. williamsi*: k, medioposterior parapodium [setae omitted]. Sources: a–c, g, i, Bergström (1914); d, Banse (1972); e, Bergström (1914) and Rioja (1941); f, Moore (1909a); h, Banse and Hobson (1968); j, original; k, Hartman (1936a) [a–e, g, i, k, modified].

4 Setae beginning on segment 4. Dorsal cirrus broadly lanceolate (Fig. 10d). Proboscis proximally with papillae in 6 lateral rows on each side and in middorsal row .... *P. madeirensis* Langerhans
(In CPF, see also Banse 1972)

Setae beginning on segment 3 5

5 Dorsal cirrus pointed (Fig. 10f) [sometimes slightly rounded in median segments]. Proboscis proximally with papillae in 6 lateral rows on each side and in middorsal row. (See also Fig. 10e) .... *P. medipapillata* Moore*
(See Hartman 1968; Hartman and Reish 1950
[*Anaitides medipapillata** in both])

Dorsal cirrus subrectangular (as in Fig. 10a). Proboscis proximally with 4–12 lateral rows of papillae on each side, without middorsal row 6

6 Proboscis with *V*-shaped middorsal gap and 12 irregular rows of 10–15 papillae on each side. Setigerous lobe longer above acicula than below (Fig. 10h). Ventral cirrus pointed .... *P. multiseriata* Rioja
(See Banse and Hobson 1968)

The local form differs from the typical form in having fewer [7-8] rows of papillae and fewer [9] papillae in each row.

Proboscis with 4 or 6 rows of papillae on each side. Setigerous lobe about same length above and below acicula 7

7 Proboscis with 4 rows of about 4 papillae on each side. Ventral cirrus pointed (Fig. 10a) .... *P. citrina* Malmgren

Proboscis with 6 rows of papillae on each side 8

8 Dorsum with 3 dark, longitudinal bands. Ventral cirrus rounded, somewhat upturned at tip 9

Dorsal pigmentation not in 3 longitudinal bands. Ventral cirrus pointed........ 10

9 Midlateral rows of papillae on proboscis with no more than 8 papillae. Ventral cirrus partly hidden behind setigerous lobe; axis of ventral cirrus approximately parallel to acicula or pointing upwards (Fig. 10c)........ *P. maculata* (Linnaeus)

Midlateral rows of papillae on proboscis with about 9 papillae. Axis of ventral cirrus tending to be oblique to acicula, pointing downwards (Fig. 10k)........ *P. williamsi* (Hartman)
(See *Anaitides williamsi* in Hartman 1968;
Banse and Hobson 1968)

10 Ventral cirrus turned outward or downward at tip. Dorsal cirrus without lobe below cirrophore (Fig. 10g). Midlateral rows of papillae on proboscis with no more than 10 papillae .... *P. mucosa* Oersted

Ventral cirrus turned downward at tip. Dorsal cirrus with lobe below cirrophore (Fig. 10b). Midlateral rows of papillae on proboscis with more than 12 papillae .... *P. groenlandica* Oersted

HESIONIDAE

Table 2, fig. G; Fig. 11

The notopodium may be fully developed or subbiramous: either with a few setae (as in Fig. 11a) or only the acicula and dorsal cirrus (as in Fig. 11d). Listed genera, except *Microphthalmus*†, have 2 biarticulate palps (as in Fig. 11c); the proboscis is without jaws [*Nereimyra*† has a pair of chitinous ridges similar to jaws]; and the dorsal cirrus is as long or longer than the neuropodium.

1 With 2 antennae (as in Fig. 11c). Notosetae, if present, not capillary [North Pacific species] 2

With 3 antennae (as in Table 2, fig. G). Notosetae present 5

2 With 6 pairs of tentacular cirri (as in Table 2, fig. G) 3

With 8 pairs of tentacular cirri (as in Fig. 11c) 4

3 Proboscis without jaws. Notosetae absent .... *Micropodarke*

Proboscis with pair of chitinized ridges similar to jaws. Notosetae sometimes present [absent in North Pacific species. Juveniles may have 3 antennae] .... *Nereimyra*†

4 Notopodium with emergent, heavy falcate spine [median segments]. Neuropodium with compound setae and long spine near acicula .... *Hesiospina*†

Notopodium without emergent, heavy spine [median segments]. Neuropodium without long spine near acicula .... *Kefersteinia*

5 With 6 pairs of tentacular cirri 6

With 8 pairs of tentacular cirri 7

6 Median antenna inserted near anterior margin of prostomium. Notosetae capillary .... *Ophiodromus*

Median antenna inserted near posterior margin of prostomium. Some or all notosetae pectinate. Palps not biarticulate .... *Microphthalmus*†

7 Notopodium small, with few setae (as in Fig. 11a). Proboscis with terminal papillae (as in Fig. 11c) .... *Gyptis*

Notopodium well developed. Proboscis without terminal papillae .... *Amphiduros*†

Gyptis Marion and Bobretzky

Proboscis with 10 short, widely spaced terminal papillae. Notosetae flattened, forked (Fig. 11b). (See also Fig. 11a) .... *G. brevipalpa* (Hartmann-Schröder)
(See Banse and Hobson 1968)

Kefersteinia Quatrefages

Proboscis with about 20 terminal papillae (Fig. 11c) .... *K. cirrata* (Keferstein)
In European material, the proboscis has about 40 terminal papillae (see Fauvel 1923).

Micropodarke Okuda

Proboscis with about 25 regularly spaced terminal papillae and interspersed smaller papillae. (See also Fig. 11d) .... *M. dubia* (Hessle)
(See Banse and Hobson 1968)

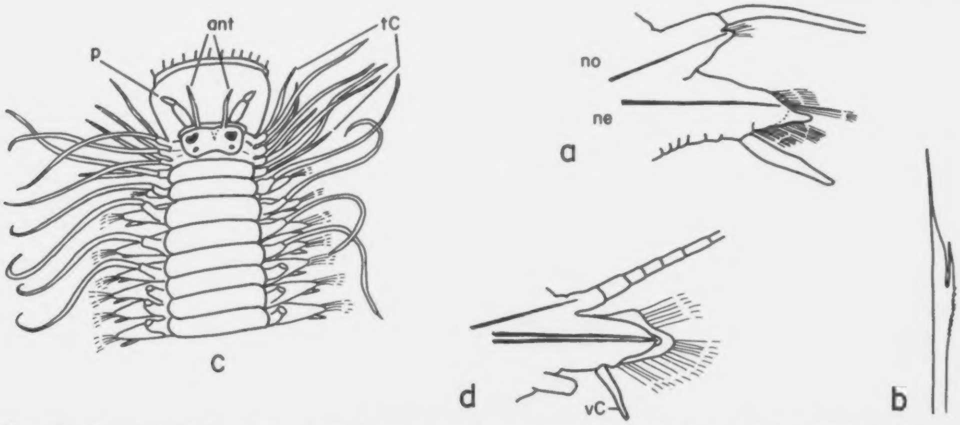


Fig. 11. HESIONIDAE: *Gyptis brevipalpa*: a, median parapodium, anterior view; b, flattened, forked notoseta. *Kefersteinia cirrata*: c, anterior end, dorsal view. *Micropodarke dubia*: d, median parapodium, posterior view. Sources: a, b, d, Banse and Hobson (1968); c, Fauvel (1923) [c, modified].

Ophiodromus Sars

Podarke Ehlers is included in this genus.

Proboscis terminally fringed, with very fine, contiguous hairs .... *O. pugettensis* (Johnson)
(*Podarke pugettensis* in CPF, see HARTMAN 1961)

PILARGIDAE

Table 2, fig. H; Fig. 12
EMERSON AND FAUCHALD (1971); PETTIBONE (1966b)

This family was not recognized in CPF; *Pilargis* was included in the Hesionidae. Check for emergent acicular setae in the median region of the body.

1 Notopodia with emergent acicular setae, bent (as in Fig. 12e) or straight. Body not ribbon-like, surface smooth [parapodia sometimes papillated] 2

Notopodia without emergent acicular setae. Body ribbon-like, surface papillated or smooth. With 2 or 3 antennae, shorter than palps 3

2 Notopodia with bent acicular setae, with dorsal cirri (as in Fig. 12e). With 3 antennae, longer than palps, and 2 pairs of tentacular cirri (see Table 2, fig. H). Parapodia sometimes papillated .... *Sigambra*

Notopodia with straight acicular setae, without dorsal cirri. Without antennae and tentacular cirri. First few setigers slightly inflated, median and posterior setigers cylindrical .... *Parandalia**

3 Median antenna absent (as in Fig. 12b). Ventral cirrus short, conical (as in Fig. 12c). Body surface minutely papillated (as in Fig. 12b) .... *Pilargis*

Median antenna present. Ventral cirrus large, anterioposteriorly flattened (as in Fig. 12a). Body surface smooth or wrinkled .... *Otopsis*

Otopsis Ditlevsen

Notopodium and neuropodium with more than 1 acicula (Fig. 12a) .... *O. longipes* Ditlevsen
(See USHAKOV 1955; BERKELEY AND BERKELEY 1957)

Parandalia Emerson and Fauchald*

First few setigers uniramous, remaining setigers biramous. Emergent notopodial acicular seta beginning on setiger 7. Parapodium with 12–15 neurosetae. Without eyes .... *P. fauveli* (Berkeley and Berkeley)*
(See Berkeley and Berkeley 1941; new record)

Parandalia fauveli is newly recorded herein. A specimen was collected by Mr B. Pease off the western coast of Baranof Island, southeastern Alaska, in 10 m on a bark and silt bottom.

Pilargis Saint-Joseph

Antennae and tentacular cirri short (Fig. 12b). Dorsal cirrus distinct (Fig. 12c [base sometimes contracted]). Neurosetae of 2 types: longer smooth, with bent tips; shorter serrated, with bent, sometimes bidentate, tips (Fig. 12d) .... *P. berkeleyae* Monro
(*P. berkeleyi* in CPF, see Pettibone 1966b)

Sigambra Müller

1 Emergent notopodial acicular seta (Fig. 12e) beginning on setiger 3 or 4. Median antenna considerably longer than [not about equal to] lateral antennae .... *S. tentaculata* (Treadwell)
(See Banse and Hobson 1968)

Emergent notopodial acicular seta usually beginning on setiger 11–15, sometimes not emergent until about setiger 30 .... *S. bassi* Hartman*
(See Hartman 1968)

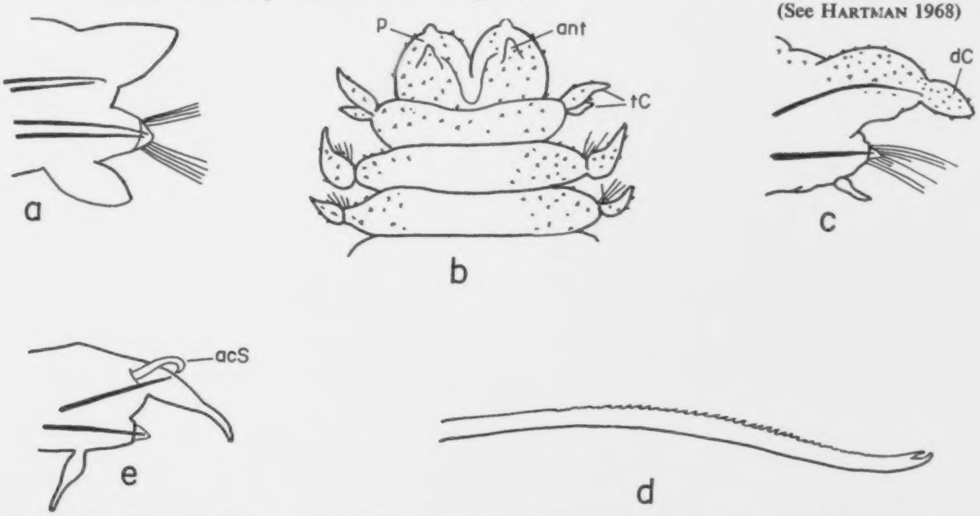


Fig. 12. PILARGIDAE: *Otopsis longipes*: a, median parapodium. *Pilargis berkeleyae*: b, anterior end, dorsal view; c, median parapodium; d, short neuroseta. *Sigambra tentaculata*: e, median parapodium [neurosetae omitted]. Sources: a, Ditlevsen (1917) and Ushakov (1955); b, c, CPF; d, Hartman (1968); e, Treadwell (1941) [a, b, modified].

SYLLIDAE

Table 3, fig. A, B; Fig. 13–17

COGNETTI (1957); IMAJIMA (1966a-e, 1967a)

The relative lengths for the cirri, pharynx [withdrawn!] and proventricle refer to preserved adult animals that are not greatly contracted. The capillary swimming setae, developed by many species at maturity, are usually supported by a notopodial acicula; this results in a subbiramous parapodium (as in Fig. 14f).

1 Ventral cirri absent. Dorsal cirri smooth. AUTOLYTINAE 2

Ventral cirri present (as in Fig. 14f, 16j). Dorsal cirri smooth or annulated 3

2 Dorsal cirri circular in cross section [slender] .... *Autolytus*

Dorsal cirri and antennae flattened .... *Myrianida*†

3 Palps fused entirely (as in Table 3, fig. A; Fig. 15i) or nearly to apices. Small forms, usually less than 5 mm in length. EXOGONINAE 4

Palps separate or fused at bases (as in Table 3, fig. B; Fig. 14b). Usually large forms 6

4 With 2 pairs of tentacular cirri. All cirri long .... *Brania*

With 1 pair of tentacular cirri (as in Fig. 15i). All cirri short 5

5 Tentacular cirri well-developed (as in Fig. 15i). Dorsal cirrus usually bottle-shaped. Body surface usually papillated .... *Sphaerosyllis*

Tentacular cirri small (as in Table 3, fig. A). Body surface smooth .... *Exogone*

6 Antennae, tentacular and dorsal cirri beaded over entire length (as in Fig. 16n) or articulated (as in Fig. 17a) [alternate dorsal cirri beaded in *Parasphaerosyllis*†]. Palps usually separate (as in Fig. 16n) or fused at bases (as in Fig. 14b). SYLLINAE 7

Antennae, tentacular and dorsal cirri smooth or pseudannulated, usually only distally [most dorsal cirri beaded in *Syllides*]. Palps fused at bases (as in Fig. 14b). EUSYLLINAE 13

7 Anterior parapodia either with only compound setae (as in Fig. 14e) or with compound and pseudocompound (as in Fig. 16p) setae 8

All parapodia with only simple setae 11

8 Dorsal cirri alternately beaded and bulbous (as in Fig. 15e) on median and posterior segments .... *Parasphaerosyllis*[†]

All dorsal cirri beaded or articulated 9

9 Body depressed, very broad (as in Fig. 17a). Pharynx with trepan (as in Fig. 17b), with or without middorsal tooth. Dorsal cirri often thick .... *Trypanosyllis*

Body not very broad in relation to height (see Table 3, fig. B). Pharynx without trepan, with middorsal tooth 10

10 Middorsal tooth usually in posterior half, occasionally in medial third, of pharynx .... *Opisthosyllis*[†]

Middorsal tooth at anterior end or in anterior third of pharynx .... *Syllis*

11 Body depressed, broad (similar to Fig. 17a). Dorsal cirrus thick. Setae distally unidentate [not as in Fig. 14m]. Pharynx with trepan (as in Fig. 17b), without middorsal tooth .... *Trypanobia*[†]

Body not depressed. Dorsal cirrus slender. Setae bifid, with lateral boss (as in Fig. 14m). Pharynx with middorsal tooth, with or without trepan 12

12 Pharynx with trepan .... *Geminosyllis*[†]

Pharynx without trepan .... *Haplosyllis*[*]

13 Length of dorsal cirrus about 5 or more times body width. Nuchal organs (see Fig. 13d) present 14

Length of dorsal cirrus not more than 3 times body width. Nuchal organs usually absent. Palps shorter than prostomium. Pharynx straight, with or without teeth. Parapodium not conspicuously long 15

14 Palps shorter than prostomium. Pharynx long and coiled. Parapodium not conspicuously long. About 15 setigers or less .... *Amblyosyllis*

Palps about 2 times longer than prostomium. Pharynx straight. Parapodium conspicuously long (as in Fig. 14a) .... *Dioplosyllis*†

15 Pharynx with several large (usually backward directed) teeth (as in Fig. 15c) .... *Odontosyllis*

Pharynx with large middorsal tooth, with (as in Fig. 14c) or without denticulated anterior margin, or unarmed 16

16 Pharynx with middorsal tooth 17

Pharynx without middorsal tooth 18

17 Pharynx with smooth anterior margin .... *Pionosyllis*

Pharynx with denticulated anterior margin (as in Fig. 14c) .... *Eusyllis*

18 Aciculae of few anterior parapodia thick, with enlarged knob-like ends (as in Fig. 15m). Dorsal cirrus smooth or irregularly pseudannulated (as in Fig. 14b) .... *Streptosyllis*

Aciculae without enlarged knob-like ends. Dorsal cirri strongly beaded, beginning on setiger 3 .... *Syllides*

Amblyosyllis Grube

Compound setae indistinctly bidentate. Nuchal organs not extending onto setiger 2. With or without brown markings on dorsum and cirri .... *Amblyosyllis* sp.
(*A. lineata* var. *alba* Berkeley
in CPF, see Hartman 1961)

The key does not distinguish this species from *A. speciosa* Izuka† (see Imajima 1966c).

Autolytus Grube

Gidholm (1966b); Imajima (1966b)

The species key refers only to the asexual forms, which generate, usually by budding, male (so-called polybostrichus, see Fig. 13d) and female (so-called sacconereis) individuals. The sexual forms break off and swarm at the water surface. Many of the described sexual forms [for diagnostic characters, see Gidholm 1965, 1966a] have not been assigned, as yet, to asexual forms. *A. varius* Treadwell, known only from a sacconereis stage (see Treadwell 1914, CPF), is not considered here.

The color patterns of specimens stored in alcohol fade easily.

1 With large eyes. Body divided into 2 or 3 regions, 2nd with conspicuous capillary swimming setae (as in Fig. 13d). Without pharynx. Polybostrichus stage with large bifurcated paired antennae (Fig. 13d). .... Sexual form.

The bifurcated antennae were termed palps by earlier authors (see Gidholm 1966b).

With 2 pairs of small eyes. Without swimming setae, with pharynx. Antennae similar to tentacular and dorsal cirri except in length (as in Fig. 13a); palps small, usually fused (as in Fig. 15i). Asexual form.
Listed species without simple or pseudocompound (similar to Fig. 16p) hooks in 1st parapodium 2

2 Upper simple setae [posterior setigers] thin, with lateral serrations (as in Fig. 13e). Nuchal organs (see Fig. 13a,d) usually extending beyond setiger 1, occasionally only to hind margin of segment 1. With segmental rings of cilia [usually visible only in life]. Subgenus *Autolytus*.
Listed species without longitudinal bands of pigment. Dorsal tentacular cirri and dorsal cirri on setiger 1 clearly longer than twice body width 3

Upper simple setae thick, with serrations on truncated end (as in Fig. 13b). Nuchal organs not extending beyond setiger 1. Without segmental rings of cilia. Subgenus *Proceraea* 4

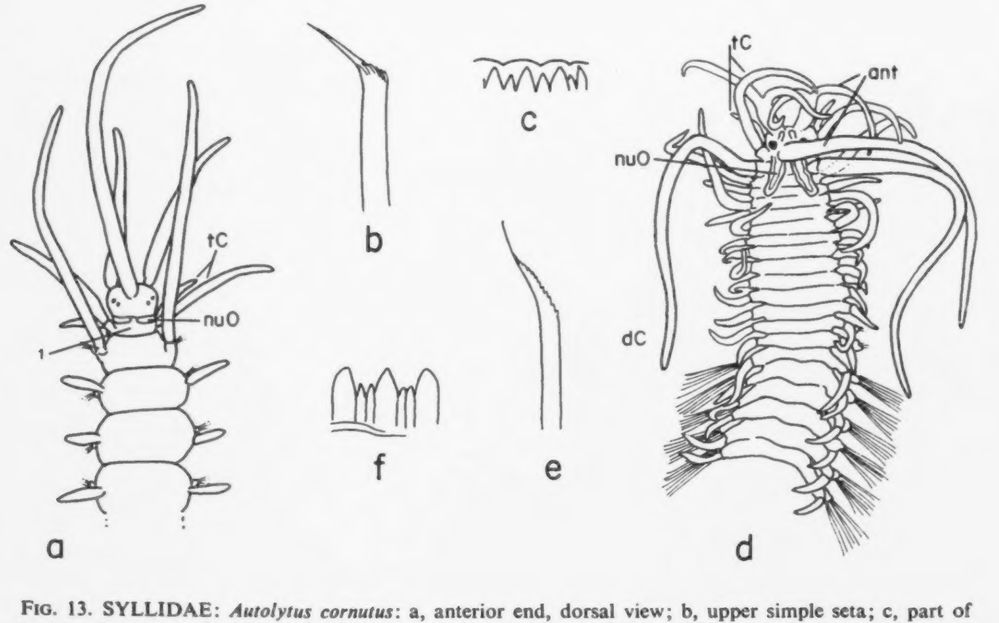


Fig. 13. SYLLIDAE: *Autolytus cornutus*: a, anterior end, dorsal view; b, upper simple seta; c, part of trepan. *A. magnus*: d, polybostrichus stage; e, upper simple seta [schematic]. *A. verrilli*: f, part of trepan. Sources: a, c–e, Imajima (1966b); b, Gidholm (1966b); f, Marenzeller (1892) [a, c–f, modified].

3 Dorsal cirrus on setiger 4 not markedly longer than those on setigers 2 and 3. Nuchal organs extending onto setiger 4. Trepan with 9 large teeth separated from each other by 2 small teeth (Fig. 13f) .... *A. verrilli* Marenzeller
(See Hamond 1969, Marenzeller 1892;
Berkeley and Berkeley 1956, Pettibone 1954)
[*A. alexandri* Malmgren† in Hamond and Pettibone]

The nuchal organs extend perhaps only onto setiger 2.

Dorsal cirrus on setiger 4 markedly longer than those on setigers 2 and 3. Nuchal organs extending to hind margin of setiger 3–5. Trepan with 45–48 [not < 30] pointed, subequal, irregularly arranged teeth. (See also Fig. 13d,e) .... *A. magnus* Berkeley
(In CPF, see also Imajima 1966b)

4 Nuchal organs not extending to hind margin of segment 1 (Fig. 13a). Dorsal cirri after setiger 1 about same length as those on setigers 5 and following. Without middorsal longitudinal dark band. Trepan with 9 large teeth alternating with 9 small (Fig. 13c). (See also Fig. 13b) .... *A. cornutus* Agassiz
(See Gidholm 1967b, Imajima 1966b; Pettibone 1954, 1963
[*Proceraea cornuta in* Gidholm;
A. prismaticus, in part, in Pettibone 1963])

Nuchal organ extending to hind margin of segment 1. Dorsal cirri after setiger 2 short, about same length as those on setigers 5 and following. With middorsal and paired lateral dark longitudinal bands 5

5 Trepan with 10 large equal teeth .... *A. trilineatus* Berkeley and Berkeley
(In CPF, see also Banse 1972)

Trepan with 9 large teeth alternating with 9 small (as in Fig. 13c) .... *A. prismaticus* (Fabricius)
(In CPF, see also Imajima 1966b)

Brania Quatrefages

Pharynx extending through 2½ segments, proventricle through 4. Median antenna inserted between posterior pair of eyes .... *B. brevipharyngea* Banse
(See Banse 1972)

Eusyllis Malmgren

All compound setae of listed species have bidentate blades, which are not hooded as in *E. inflata* Marenzeller† (Fig. 14d). The dorsal cirri on median segments are shorter than, or about as long [not twice as long] as, the width of the body. The ventral cirri of the 1st setiger are not greatly enlarged over those on following setigers.

1 With small occipital flap (as in Fig. 14b), lacking incisions 2

Without occipital flap 3

2 Compound setae in median and posterior parapodia with short blades (like smaller seta in Fig. 14e), uniform in shape. Pharynx entrance surrounded by 2 rows of soft papillae (Fig. 14c). (See also Fig. 14b) .... *E. blomstrandi* Malmgren
(In CPF, see also Banse and Hobson 1968)

Compound setae in median and posterior parapodia with 2 types of blades: long and short, differing in shape (Fig. 14e). Pharynx entrance surrounded by 1 row of soft papillae. With 3–5 aciculae .... *E. japonica* Imajima and Hartman
(See Banse 1972)

3 Dorsal cirrus with conspicuous cirrophore (Fig. 14f) [median segments]. Ventral cirrus shorter than setigerous lobe. Compound setae with blades almost uniform in length within parapodia .... *E. magnifica* (Moore)
(See Pettibone 1954)

Dorsal cirrus without cirrophore. Ventral cirrus same length as setigerous lobe. Upper compound setae in median parapodia with blades twice as long as those of lower setae. Posterior parapodia with single upper and lower simple setae; upper with unidentate tips, lower with bidentate .... *E. assimilis* Marenzeller

Exogone Oersted

1 Anterior setigers with 1 or 2 compound setae with short needle-like blades (as in Fig. 14g). Antennae of uniform length 2

Anterior setigers with 1–3 compound setae with very long blades (as in Fig. 14h). Lateral antennae approximately as short as dorsal cirri, median antenna longer than prostomium 3

2 Antennae approximately as short as dorsal cirri (as in Table 3, fig. A). (See also Fig. 14g) .... *E. verugera* (Claparède)

Antennae longer than prostomium. Dorsal cirri absent on setiger 2. Proventricle extending through 2 or 3 segments .... *E. gemmifera* Pagenstecher?
As the proventricle of *E. gemmifera* from European waters only extends through 1½ segments (see Cognetti 1957), the Pacific form probably should be assigned to a new species.

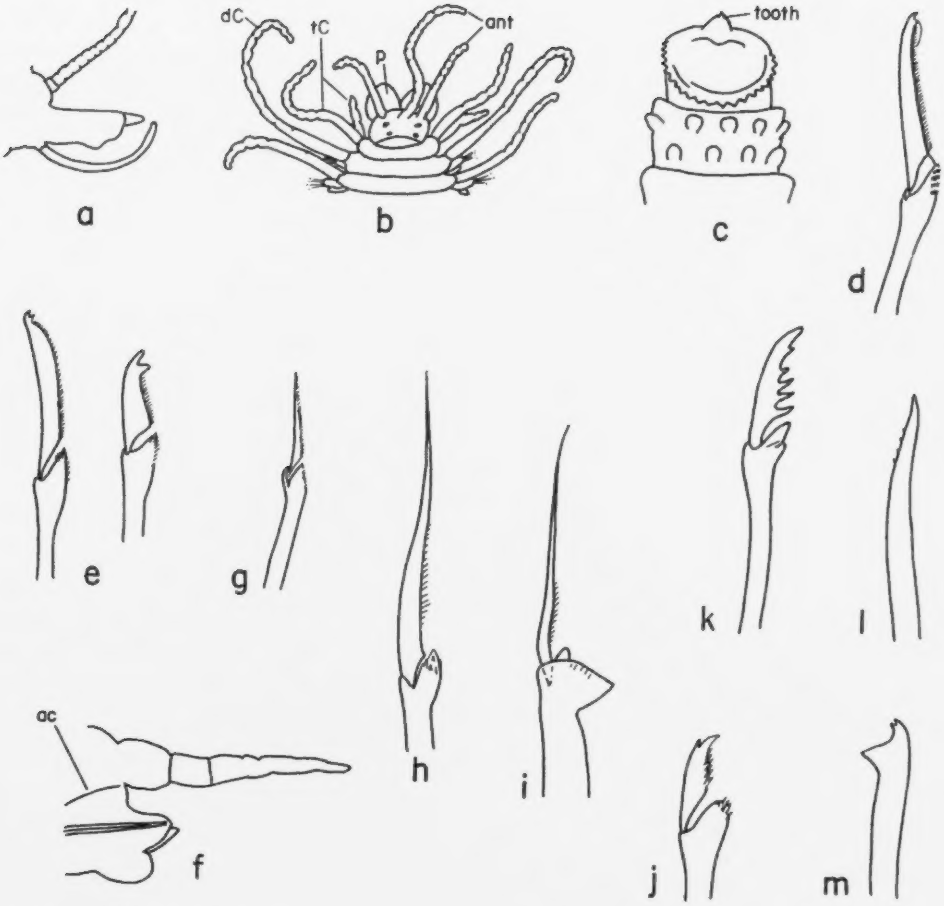


FIG. 14. SYLLIDAE: *Dioplosyllis*† sp.: a, anterior parapodium [setae omitted]. *Eusyllis blomstrandi*: b, anterior end, dorsal view; c, everted pharynx, ventral view [schematic]. *E. inflata*†: d, hooded compound seta. *E. japonica*: e, upper and lower compound setae from median parapodium. *E. magnifica*: f, median parapodium [notopodial acicula present only in breeding animals; setae omitted]. *Exogone verugera*: g, upper compound seta from median parapodium. *E. lourei*: h, normal upper compound seta; i, upper compound seta from setiger 2; j, compound seta with short blade. *E. molesta*: k, lower compound seta; *l*, upper simple setae. *Haplosyllis spongicola spongicola**: m, simple seta from median parapodium. Sources: a, Imajima and Hartman (1964); b, Fauvel (1923); c, Fauvel (1923) and Banse and Hobson (1968); d, Imajima (1966c); e, original; f, Moore (1906); g, Imajima (1966a); h, i, k, *l*, Banse (1972); j, Banse and Hobson (1968); m, Imajima (1966d) [a, c, f–h, modified].

3 Long-bladed [upper] setae on setiger 2 (Fig. 14i) with shafts much wider than those of other upper setae (Fig. 14h). Short-bladed [lower] setae as in Fig. 14j .... *E. lourei* Berkeley and Berkeley
(In CPF, see also Banse 1972)

Long-bladed [upper] setae with shafts of same width; blades with bent, rounded tips. Short-bladed [lower] setae with few large teeth on cutting edges of blades (Fig. 14k). Upper simple setae with pointed tips (Fig. 14*l*). Dorsal cirri absent on setiger 2. Proventricle extending through 4 segments .... *E. molesta* Banse
(See Banse 1972)

Haplosyllis Langerhans*

Long dorsal cirri on median segments with less than 20 articles. Proventricle extending from setiger 6–8 through 5–6 setigers [not from about setiger 14 through 8–10 setigers]. (See also Fig. 14m) .... *H. spongicola spongicola* (Grube)*
(See Imajima 1966d)

Odontosyllis Claparède

The listed species have a large occipital flap partly covering the prostomium (as in Fig. 15a) and distinctly bidentate setae. The pharyngeal dentition [many small teeth] of the juveniles is described by Herpin (1926).

1 Posterior [after approximately setiger 40] setigers biannulate. Proventricle extending through about 20 segments. Blades of compound setae short, similar to Fig. 15d .... *O. fulgurans japonica* Imajima
(See Banse 1972)

Posterior setigers not biannulate 2

2 Without color pattern [preserved specimens]. Blades of compound setae in anterior parapodia short, without hairs on cutting edges (Fig. 15b). Proventricle extending through 6 segments. (See also Fig. 15a) .... *O. parva* Berkeley
(In CPF, see also Banse 1972)

With or without black pigment on occipital flap, with single large dark spot dorsally on every 3rd or 4th intersegmental furrow. Blades of compound setae with hairs on cutting edges (Fig. 15d). (See also Fig. 15c) .... *O. phosphorea* Moore
(*O. phosphorea* and *O. phosphorea* var. *nanaimoensis* Berkeley in CPF, see Banse 1972)

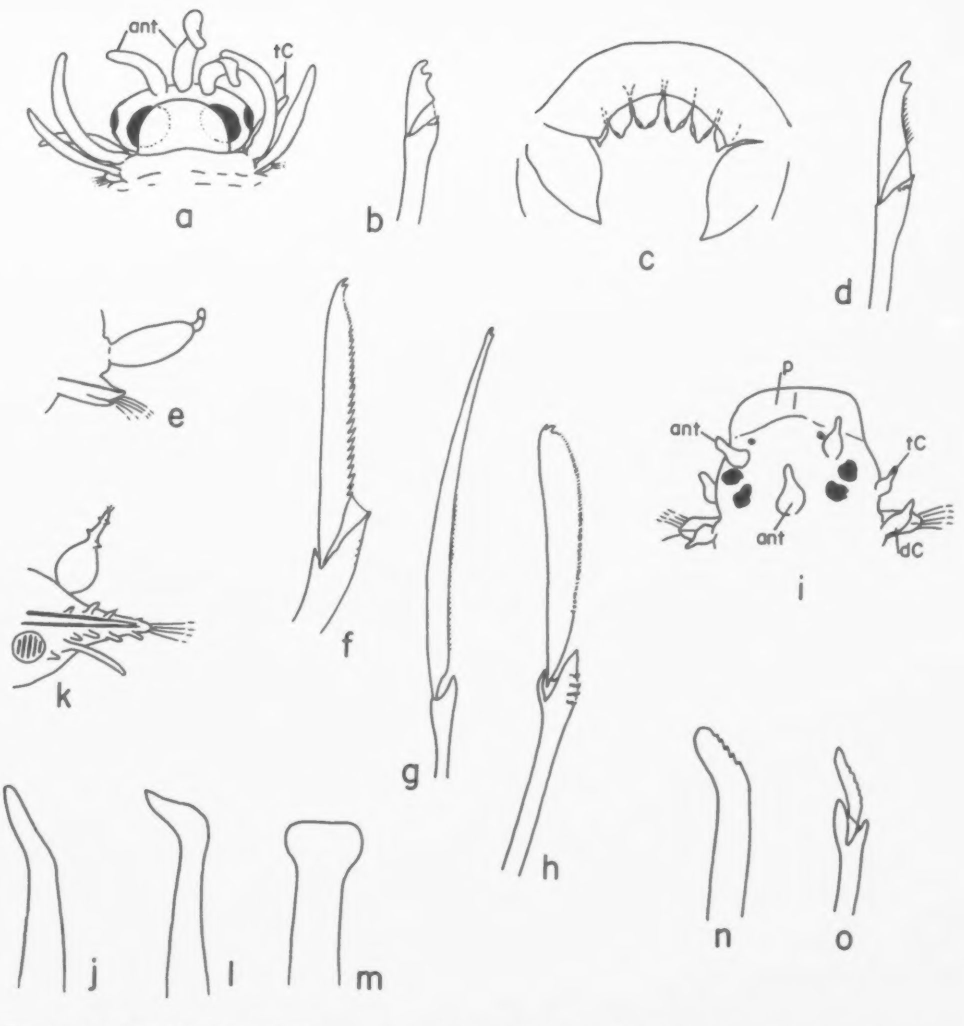


FIG. 15. SYLLIDAE: *Odontosyllis parva*: a, anterior end, dorsal view; b, compound seta from median parapodium. *O. phosphorea*: c, armature of pharynx; d, compound seta from anterior parapodium. *Parasphaerosyllis*† sp.: e, median parapodium. *Pionosyllis gigantea*: f, compound seta with blade of average length. *P. uraga*: g, upper compound seta; h, lower compound seta [scale different from that of Fig. 15g; blades may be ⅜ length of blade figured]. *Sphaerosyllis brandhorsti*: i, anterior end, dorsal view; j, acicula. *S. hystrix*: k, parapodium. *S. pirifera*: *l*, acicula. *Streptosyllis latipalpa*: m, acicula. *Syllides longocirrata*: n, upper simple seta from anterior parapodium; o, lowest compound seta from anterior parapodium. Sources: a, CPF; b–d, Banse (1972); e, Imajima and Hartman (1964); f, Moore (1908); g, Banse and Hobson (196[illegible], h, Imajima (1966c); i, j, original; k, Claparède (1863); *l*, Fauvel (1923); m, Banse (1968); n, o, Banse (1971) [a, e, k, *l*, modified].

Pionosyllis Malmgren

In the listed species, ventral cirri on the 1st setiger are not greatly enlarged over those on the following setigers. Ventral cirri on median segments have a broad outline and are less than 3 times as long as wide. The compound setae are distinctly bidentate (as in Fig. 15f).

1 All parapodia with 1 type of compound setae: blades more than 3 times as long as wide (Fig. 15f), uniform in length within parapodia. Anterior dorsal cirri sometimes very long, forming entangled mass .... *P. gigantea* Moore

Anterior parapodia with upper compound setae differing from lower: upper with very long blades (Fig. 15g), lower with shorter, distally broadened blades (Fig. 15h) .... *P. uraga* Imajima
(See Banse and Hobson 1968)

Sphaerosyllis Claparède

The listed species are papillated [adhesive] dorsally.

1 With 3 pairs of eyes (Fig. 15i). Single upper simple setae, with pointed tips (similar to Fig. 14*l*), beginning on setiger 1. Dorsal cirri present on setiger 2. Proventricle extending through 4 segments. Acicula slightly bent at tip (Fig. 15j) .... *S. brandhorsti* Hartmann–Schröder
(See Banse 1972)

With 2 pairs of eyes. Single upper simple seta beginning on setiger 5–9. Proventricle extending through 2–2½ segments. Acicula sharply bent at tip (as in Fig. 15*l*) 2

2 With capsule containing rods near proximal ends of setal sacs (Fig. 15k) from setiger 4. Embryos carried ventrally .... *S. hystrix* Claparède

Without capsules. Embryos carried dorsally.[5] (See also Fig. 15*l*) .... *S. pirifera* Claparède

Streptosyllis Webster and Benedict

Acicula with enlarged knob-like end (Fig. 15m) in setigers 2–5 .... *S. latipalpa* Banse
(See Banse 1968)

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[5] Observation by Dr S. A. Woodin at Friday Harbor, Washington. In European material, the embryos are carried ventrally (Fauvel 1923).

Syllides Oersted

1 Upper simple setae in approximately first 5 parapodia very thick, bent at tips (Fig. 15n), in remaining parapodia long and drawn out. Compound setae in same anterior parapodia with ends of shafts thick, rounded (Fig. 15o) .... *S. longocirrata* Oersted
(See Banse 1971)

Upper simple setae and ends of shafts of compound setae in anterior parapodia not differing from those in remaining parapodia .... *S. japonica* Imajima
(See Banse 1971)

Syllis Savigny

The descriptions of dorsal cirri refer to those of median segments; the number of articles varies somewhat, apart from a regular alternation in length in some species, so that several counts on different individuals should be made. This character does not hold for young specimens. The simple setae (Fig. 16d,h) characterizing the subgenus *Syllis*, must not be confused with compound setae that have accidentally lost their blades.

Other keys (CPF, Hartman 1968 and Imajima 1966d,e), should be consulted in case there are any doubts about identifications.

1 With compound setae and, at least in median parapodia, pseudocompound setae (as in Fig. 16p) or some thick simple setae. Tips of simple setae as in Fig. 16d or notched (as in Fig. 16h). Subgenus *Syllis* 2

With compound setae and, mainly in posterior parapodia, single thin upper and/or lower simple setae. Tips of simple setae bidentate or unidentate. [Median parapodia in *S. adamantea* with thick upper simple setae as in Fig. 16d] 4

2 Setae mostly pseudocompound (Fig. 16p). Dorsal cirri on median and posterior, sometimes also on anterior, segments alternating in length; long cirri with 20–40 articles. Proventricle extending from about setiger 14 through 8–10 setigers [not from setiger 6–8 through about 6 setigers] .... *S. spongiphila* Verrill
(*S. sclerolaema* Ehlers in CPF, see Imajima 1966d)

Setae mostly compound 3

3 Dorsal cirrus with 6–7 articles, short. Median parapodia without compound setae, with some thick notched setae (Fig. 16h) .... *S. gracilis* Grube*
(See Imajima 1966d)

Dorsal cirrus with 10–20 articles, length ½–¾ body width. Median and most posterior parapodia with 1 or 2 upper simple setae [without complete blades even in setal sacs] thicker by ½ than compound setae; ends less sculptured than ends of shafts of compound setae (cf. Fig. 16d and e). Other setae compound; blades short with small [or worn] tooth below tips (Fig. 16e). Compound setae in anterior 10–15 parapodia with longest blades (Fig. 16f) about twice as long as shortest .... *S. elongata* (Johnson)
(In CPF, see also Banse 1972)

4 Blades of some compound setae in most [sometimes not in posteriormost] parapodia conspicuously long; tips rounded (as in Fig. 16k) or needle-like. Subgenus *Ehlersia*.

Upper setae in all parapodia with blades 4 or more times longer than those of lower setae; tips rounded (Fig. 16k). All lower setae with bidentate blades (Fig. 16*l*). Dorsal cirri with less than 20 articles. Proventricle extending through approximately 10 segments .... *S. heterochaeta* Moore

A slim form, *Syllis* (*Langerhansia*) sp. I, with setae agreeing with those of *S. heterochaeta*, was recorded by Banse et al. (1968) from Puget Sound. This form may prove to be a juvenile of this species.

Blades of compound setae usually not conspicuously long, not varying in length by more than a factor of 2–4 within parapodia, similar in shape. Subgenus *Typosyllis*.

Listed species without a large occipital flap [see however *S. pulchra*, Fig. 16n]. Anterior dorsal cirri not differing markedly from each other in thickness 5

5 Habitus similar to *Lumbrineris* spp. (see Table 4, fig. C). Dorsal cirrus about as long as *length* of segment. Without distinctive dorsal color pattern. Length of blades (Fig. 16q) uniform within anteriormost parapodia. Thick upper setae in median and posterior setigers, usually with blades lost, resembling simple setae of *S. elongata* (see Fig. 16d) .... *S. stewarti* Berkeley and Berkeley

(In CPF, see also Banse 1972)

Habitus similar to Table 3, fig. B. Dorsal cirrus at least as long as half body width 6

6 Dorsal cirrus with approximately 12 or fewer articles [except in *S. armillaris* and possibly *S. hyalina*]. Palps separate (as in Fig. 16n). Segments not triannulate 7

Dorsal cirrus usually with more than 12 articles. Palps separate or fused for half their length 8

7 Dorsal cirri thick, spindle-shaped (Fig. 16b), with 9–11 (8–16) articles; those on adjoining segments almost equal in length. Setigers 4–9 with same dorsal color pattern as anteriormost and following ones (Fig. 16c). Compound setae in anterior and posterior parapodia with bidentate blades, in median parapodia with unidentate blades. Posterior parapodia with only upper single simple setae; tips pointed even in posteriormost parapodia .... *S. armillaris* (Müller)

Dorsal cirri slender, alternating in length. All compound setae with bidentate blades. Posterior parapodia with both upper and lower single simple setae; tips bidentate (Fig. 16m) .... *S. hyalina* Grube

Long dorsal cirri have 8-12 or 14 articles and short have 6-7 or 11 articles according to Fauvel (1923) and Imajima (1966d), respectively.

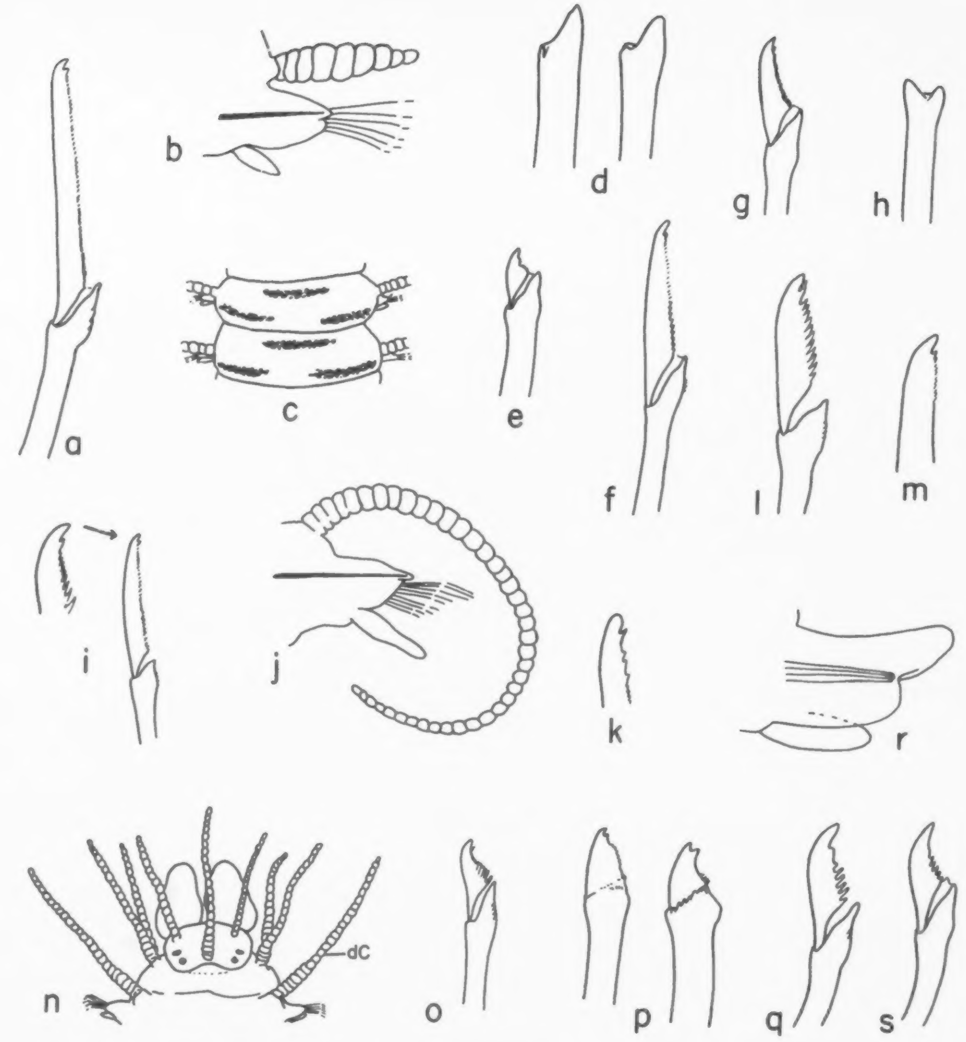


FIG. 16. SYLLIDAE: *Syllis alternata*: a, upper compound seta from anterior parapodium. *S. armillaris*: b, anteromedian parapodium; c, dorsal color pattern on anterior segments. *S. elongata:* d, upper simple setae from median parapodium; e, lower compound seta from median parapodium; f, compound seta with long blade from anterior parapodium. *S. fasciata**: g, compound seta. *S. gracilis**: h, notched simple seta. *S. harti*: i, middle compound seta from median parapodium: j, parapodium. *S. heterochaeta*: k, tip of upper compound seta; *l*, lower compound seta. *S. hyalina*: m, tip of lower simple seta. *S. pulchra*: n, anterior end, dorsal view; o, compound seta from setiger 4. *S. spongiphila*: p, pseudocompound setae. *S. stewarti*: q, compound seta from anterior parapodium. *Syllis* sp.: r, median parapodium [setae omitted]; s, compound seta from anterior parapodium. Sources: a, j, n, Berkeley and Berkeley (1938a); b, Fauvel (1923); c, Malmgren (1867); d–g, o, q–s, Banse (1972); h, p, Imajima (1966d); i, Banse and Hobson (1968) [detail original]; k–m, original [a–c, modified; n modified, based on type material].

8 Dorsal cirri alternating in length in some species, long with 10–25 articles. Palps usually fused for half their length (similar to Fig. 14b) 9

Dorsal cirri alternating in length, long with more than 30–35 articles. Palps essentially separate to bases. Pharynx extending through more than 3 setigers. 11

9 With middorsal circular or oval pigment-free zone on median segments. Dorsal cirri with 10–20 articles, uniform in length, about ⅓ as long as body width. Median parapodia with thick upper simple setae similar to those of *S. elongata* (see Fig. 16d). Palps sometimes fused for half their length. Posterior end of proventricle at about setiger 15 .... *S. adamantea adamantea* (Treadwell)

(*S. spenceri* Berkeley and Berkeley in CPF,
see IMAJIMA AND HARTMAN 1964)

Without middorsal pigment-free zone on median segments 10

10 Blades of upper compound setae in anterior parapodia (Fig. 16a) 2–4 times longer than those of lower setae [difference diminishing in median setigers]; tips distinctly bidentate [not rounded as in Fig. 16k]. Dorsal cirri alternating in length; in median region short cirri with about 18, long with about 25 articles, latter almost as long as body width [number of articles declining to 1–2 at posterior end in type material from southeastern Alaska] .... *S. alternata* Moore

Blades of compound setae almost uniform in length within parapodia, with fine hairs [instead of teeth] on cutting edges (Fig. 16g) ...... *S. fasciata* Malmgren*

(not *S. fasciata* in CPF, see BANSE 1972)

11 With small occipital flap (Fig. 16n). Long dorsal cirri with 50–70 articles, length about equal body width. Blades of compound setae almost uniform in length throughout body, with single hair below tips (Fig. 16o) in anterior parapodia .... *S. pulchra* Berkeley and Berkeley

(In CPF, see also BANSE 1972)

Without occipital flap 12

12 Parapodium with conspicuous lip above acicula (Fig. 16r). Compound setae unidentate (Fig. 16s) in anterior parapodia. Dorsal cirri on anterior setigers with about 40 articles, length ½–¾ body width .... *Syllis* sp.

(*S. fasciata** [not Malmgren], in part, in CPF, see Banse 1972)

Parapodium without lip above acicula. Short dorsal cirri with 20–30 articles, long with 30–40; length of latter about twice body width 13

13 Blades of compound setae similar in length within parapodia, clearly bidentate (as in Fig. 15f). Median antenna inserted in front of anterior eyes. Palps separate. Proventricle extending through 10–13 segments ...... *S. variegata* Grube*
(See Hartman 1968, Imajima 1966e)

Blades of upper compound setae in median parapodia 2–3 times as long as those of middle setae, with tips of same form (weakly bidentate, Fig. 16i). Ventral cirrus inserted in middle of setigerous lobe (Fig. 16j). Acicula pointed (needle-like). Median antenna inserted near posterior margin of prostomium. Palps almost completely separate at base. Proventricle extending through 9–13 segments. .... *S. harti* Berkeley and Berkeley
(In CPF, see also Imajima 1966e [p. 291, under *Typosyllis regulata* Imajima†], Banse and Hobson 1968)

Trypanosyllis Claparède

1 With large middorsal tooth .... Subgenus *Trypanosyllis*†

Without middorsal tooth. Subgenus *Trypanedenta*.
Listed species with trepan of about 10 [not 18–20] teeth (as in Fig. 17b) 2

2 Compound setae unidentate (Fig. 17d) [bidentate in stolons]. Dorsal cirrus very thick, with more than 15 articles .... *T. ingens* Johnson
(See Berkeley and Berkeley 1952, p. 139)

Compound setae conspicuously bidentate (Fig. 17c); only one kind within parapodium [study median setigers]. (See also Fig. 17a,b) .... *T. gemmipara* Johnson
(In CPF, see also Berkeley and Berkeley 1962, Imajima 1966d)
Anterior and median segments may bear two black stripes across the dorsal side.

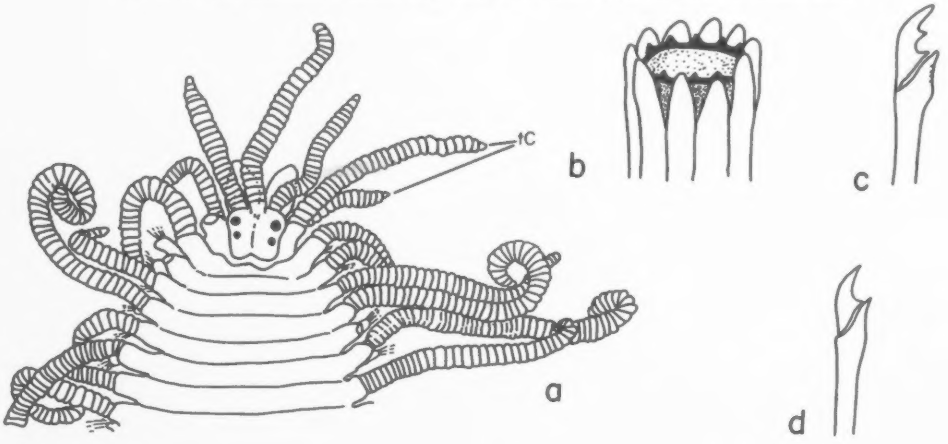


Fig. 17. SYLLIDAE: *Trypanosyllis gemmipara*: a, anterior end, dorsal view; b, trepan with surrounding soft papillae; c, compound seta from median segment. *T. ingens*: d, compound seta. Sources: a, Johnson (1901); b, c, original; d, Berkeley and Berkeley (1952) [a, d, modified].

NEREIDAE

Table 3, fig. C; Fig. 18
Hartman (1968); Imajima (1972)

The diagnostic characters in this family are based, for the most part, on the paragnaths (see Fig. 18a-c), the parapodia, and the setae. The areas where paragnaths may be present on the oral (proximal) and maxillary (distal) rings of the proboscis are designated by Roman numerals (see Fig. 18i,j; even-numbered areas occur in pairs). After setiger 2, the complete parapodium (as in Fig. 18o) has a dorsal and ventral cirrus; the notopodium bears a dorsal ligule above, and another ligule below the setae; sometimes, the setigerous lobe is conspicuous. The neuropodium bears a ligule below the large setigerous lobe.

Most nereid species metamorphose at maturity into so-called heteronereid forms which swarm at the water surface. The parapodia are usually greatly enlarged (see Fig. 18d) in the median portion of the body where most or all setae of the asexual form are replaced by paddle-like swimming setae (see Fig. 18e). The species key is written only for the asexual forms but sometimes the heteronereid forms can be identified from the unmodified characters of the asexual forms.

1 Body divided into 2 or 3 regions, middle region usually with enlarged parapodia (as in Fig. 18d) and swimming setae (as in Fig. 18e). Usually with large eyes .... heteronereid form

Body not obviously divided into regions 2

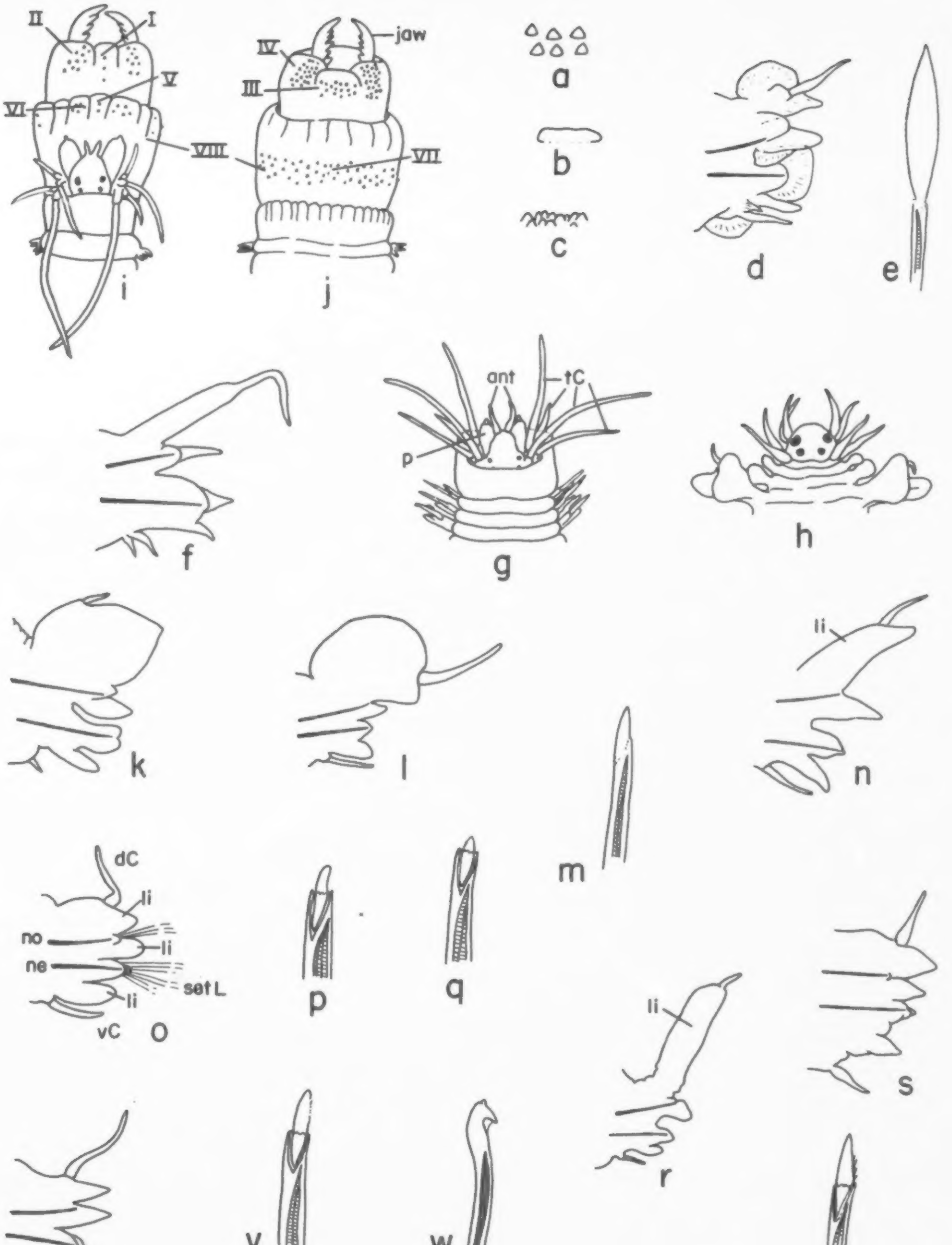
2 Antennae absent (as in Fig. 18h). Palps small [lacking in European species] .... *Micronereis*

Antennae present (as in Fig. 18g). Palps well developed 3

3 With 3 pairs of tentacular cirri. Notopodium without setae, with acicula .... *Namanereis**

With 4 pairs of tentacular cirri. Notopodium with setae 4

Fig. 18. NEREIDAE: Paragnaths: a, conical; b, transverse; c, pectinate row. Heteronereid form: d, median parapodium [setae omitted]; e, swimming seta. *Ceratocephale loveni**: f, 20th parapodium [setae omitted]. *Cheilonereis cyclurus*: g, anterior end, dorsal view. *Micronereis nanaimoensis*: h, anterior end, dorsal view [setae omitted]. *Nereis brandti*: i, anterior end, dorsal view; j, anterior end, ventral view; k, median parapodium [setae omitted]. *N. grubei*: *l*, posterior parapodium [setae omitted]. *N. limnicola*: m, neuropodial simple seta from posterior region. *N. neoneanthes*: n, posterior parapodium [setae omitted]. *N. pelagica*: o, anterior parapodium; p, notopodial falciger. *N. procera*: q, notopodial falciger, *N. vexillosa*: r, posterior parapodium [setae omitted]. *N. wailesi*: s, parapodium [setae omitted]; t, notopodial falciger. *N. zonata**: u, anterior parapodium [setae omitted]; v, notopodial falciger. *Platynereis bicanaliculata*: w, notopodial hooked seta. Sources: a–c, e, i, j, original; d, g, k, q, r, w, Johnson (1901); f, Ushakov (1958); h, Berkeley and Berkeley (1953); *l*, Reish (1954); m, Hartman (1968); n, Hartman (1948); o, p, u, v, Fauvel (1923); s, t, Berkeley and Berkeley (1954) [d, f–h, k, n, r–t, v, w, modified].



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4 Ventral cirrus bifid anteriorly (as in Fig. 18f) ...... *Ceratocephale**

All ventral cirri simple 5

5 Notopodium without dorsal ligule ...... *Tylorrhynchus*†

Notopodium with dorsal ligule [after setiger 2] 6

6 Tentacular cirri annulated [smooth in the species in South Japan] ...... *Nicon*

Tentacular cirri smooth (as in Fig. 18g) 7

7 First, apparently apodous, segment projecting anteriorly, more markedly on ventral side, to form collar (as in Fig. 18g) ...... *Cheilonereis*

First segment not forming collar (see Table 3, fig. C) 8

8 All paragnaths conical (as in Fig. 18a) [rarely rounded at tips] ...... *Nereis*

Some or all paragnaths not conical 9

9 Paragnaths on Area VI transversely elongated (as in Fig. 18b) ...... *Perinereis*

Some or all paragnaths in pectinate rows (as in Fig. 18c) 10

10 Paragnaths on some areas of maxillary ring in pectinate rows. Dorsal ligule enlarged in posterior parapodia (somewhat similar to Fig. 18n or r) ...... *Pseudonereis*†

All paragnaths in pectinate rows. Dorsal ligule about same size as other ligules throughout ...... *Platynereis*

Ceratocephale Malmgren*

The proboscis has a few large non-chitinized papillae but lacks paragnaths.

Prostomium without eyes. (See also Fig. 18f) ...... *C. loveni* Malmgren*
(For subspecies, see HARTMAN 1960; USHAKOV 1958)

Cheilonereis Benham

Dorsal ligule greatly enlarged in posterior parapodia; dorsal cirrus inserted between 2 protuberances. (See also Fig. 18g) .... *C. cyclurus* (Harrington)

Micronereis Claparède

Adults with 22–26 setigers. With jaws. (See also Fig. 18h) .... *M. nanaimoensis* (Berkeley and Berkeley)
(*M. variegata*† [not Claparède] in CPF,
see Berkeley and Berkeley 1953)

Namanereis Chamberlin*

Prostomium with eyes .... *N. quadraticeps* (Blanchard)*
(See Day 1967, Hartman 1959b, 1968)

Nereis Linnaeus

The separation of the subgenera *Nereis* and *Neanthes* follows Hartman (1940). The listed species of the subgenus *Nereis* have eyes; the listed species of the subgenus *Ceratonereis* lack homogomph falcigers posteriorly.
N. (*Nereis*) *natans* Hartman (1936b), known only from the heteronereid form, was recorded from British Columbia by Berkeley (1967); it is not included in the key.

1 Posterior notopodia with homogomph falcigers (as in Fig. 18p,q) 2

Posterior notopodia without homogomph falcigers 9

2 Paragnaths absent on maxillary ring. Subgenus *Eunereis*.
Setigerous lobes of median and posterior neuropodia small (Fig. 18s) [not large and sack-like]. Notopodial homogomph falcigers with spinous blades (Fig. 18t) .... *N. wailesi* Berkeley and Berkeley
(See Berkeley and Berkeley 1954)

Paragnaths present on maxillary ring, occasionally lacking on Area I; usually lacking on Area V; occasionally present on all areas. Subgenus *Nereis* 3

3 Dorsal ligule much larger than other ligules in posterior parapodia (as in Fig. 18*l*,n,r). First pair of ventral tentacular cirri not clearly thicker than others 4

Dorsal ligule not markedly larger than other ligules (see Fig. 18o,u) throughout. Paragnaths, if present on Area V, not clearly larger than all others 6

4 Dorsal ligule strap-like in posterior parapodia (Fig. 18r) [ligule is shorter in subadults]. Areas VII and VIII with anterior row of large paragnaths and irregular posterior band of slightly smaller paragnaths .... *N. vexillosa* Grube

This species possibly has a dimorphic life history (see JOHNSON 1943).

Dorsal ligule not strap-like in posterior parapodia 5

5 Area V usually without paragnaths; Areas VII and VIII with irregularly arranged large paragnaths; Area VIII anteriorly also with numerous small paragnaths. (See also Fig. 18*l*) .... *N. grubei* (Kinberg)

(*N. callaona*† [not Grube] in CPF, see REISH 1954)

Area II with few, small paragnaths; Area V with 3–5 paragnaths; Areas VII and VIII with 1 or 2 anterior rows of large, often rounded, paragnaths and broad posterior band of small paragnaths. (See also Fig. 18n) .... *N. neoneanthes* Hartman

(See HARTMAN 1948; HOUGHTON 1973)

6 Posterior dorsal tentacular cirri usually much longer than others, extending to setiger 4–8. Paragnaths small, absent on Area I, usually also on Area V; sparse on Area II. Blade of notopodial homogomph falciger ovoid (Fig. 18q) .... *N. procera* Ehlers

Tentacular cirri not differing greatly in length, longest not extending beyond setiger 3 7

7 Paragnaths present on all areas, small and very numerous, forming continuous band on oral ring. Blade of notopodial homogomph falciger with blunt rounded end (similar to Fig. 18p) .... *N. eakini* Hartman

Paragnaths absent on Area V; Areas VII and VIII with anterior row of large paragnaths and posterior band of smaller paragnaths 8

8 Ligules of anterior parapodia rounded (Fig. 18o). Blade of notopodial homogomph falciger with blunt rounded end (Fig. 18p). Area VI with 4 (5) paragnaths arranged in diamond pattern. Small paragnaths in Areas VII and VIII in narrow band .... *N. pelagica* Linnaeus

The key refers to typical *N. pelagica* from northwestern Europe (see HARTMANN-SCHRÖDER 1971). In local material, the homogomph setae may have bluntly pointed blades, similar to Fig. 18v but with nearly smooth cutting edges.

Ligules of anterior parapodia pointed (Fig. 18u). Blade of notopodial homogomph falciger straight, finely serrated (Fig. 18v). Area VI with oval group of small paragnaths .... *N. zonata* Malmgren*

(See HARTMAN 1968)

9 Paragnaths usually absent on oral ring, occasionally few on Area VII. Subgenus *Ceratonereis.*

Posterior notopodia with spinigers only. Posterior neuropodia without conspicuous acicular hooks. Area VII with 3 [not 6] paragnaths .... *N. paucidentata* Moore

Paragnaths usually present on all areas, occasionally absent on Area I or V. Subgenus *Neanthes* 10

10 Dorsal ligule not markedly larger than other ligules (similar to Fig. 18u) throughout. Posterior neuropodia with conspicuous pseudocompound (heterogomph) or simple (Fig. 18m) setae above acicula; homogomph spinigers in upper part of bundle below acicula. Hermaphroditic, without pelagic swarming, viviparous .... *N. limnicola* Johnson
(*N. japonica*† [not Izuka] in CPF, see Smith 1958)

Dorsal ligule much larger than other ligules throughout most of body, foliaceous, with cirrus on upper edge (as in Fig. 18k) [not inserted between 2 protuberances] 11

11 Paragnaths in band of at least 4–5 rows on Areas VII and VIII (Fig. 18j). (See also Fig. 18i,k) .... *N. brandti* (Malmgren)
(See Hartman 1968)

Paragnaths in 2 or 3 irregular rows on Areas VII and VIII; sometimes absent on Area 1 .... *N. virens* Sars

Nicon Kinberg

The proboscis lacks papillae or paragnaths in the species of this genus.

As in generic key .... *N. moniloceras* (Hartman)
(See Hartman 1968; questionable record by Berkeley 1967)

Perinereis Kinberg

Area VI with 1 transversely elongated paragnath; Area V with 1 [not 3] paragnath. Dorsal ligule enlarged in posterior parapodia (similar to Fig. 18n) .... *P. monterea* (Chamberlin)
(See Hartman 1940)

Platynereis Kinberg

Median and posterior parapodia with heavy notopodial hooked setae (Fig. 18w) .... *P. bicanaliculata* (Baird)
(*P. dumerilii* var. *agassizi* (Ehlers) in CPF, see HARTMAN 1954a, 1968)

NEPHTYIDAE

Table 3, fig. D; Fig. 19
FAUCHALD (1967); HARTMAN (1950)

The characters of the parapodia (for nomenclature, see Fig. 19a,d,f) used in the key refer to the body region where the interramal cirri are fully developed [usually, setigers 20-30 in large animals]. Interramal cirri (see Fig. 19a,c,h), called gills by some authors, must not be confused with the slender or triangular dorsal cirri (see Fig. 19a,h,p), which are also present on parapodia lacking interramal cirri. The diagnostic rows of papillae on the proboscis, best visible when the organ is everted (see Fig. 19m), are arranged longitudinally. A conspicuous median unpaired papilla may be present dorsally, sometimes also ventrally. Proximally, the proboscis may be smooth or rough [with small warts].

1 Interramal cirri lacking except in 10th and few adjacent parapodia. With fenestrated (chambered) setae (see Table 3, fig. D) in anterior parapodia only .... *Micronephthys*†

Interramal cirri present in all except first and last few parapodia. With fenestrated setae usually in all parapodia 2

2 Interramal cirrus involuted (as in Fig. 19a) .... *Aglaophamus*

Interramal cirrus usually recurved (as in Fig. 19f), sometimes pointing downward (as in Fig. 19c) or inward (as in Fig. 19k) .... *Nephtys*

Aglaophamus Kinberg

Interramal cirri beginning on setiger 4 [not 9], forming spiral (as in Fig. 19a) except in first few parapodia. Neuropodium with small spur at upper edge. Prostomium without eyes. Proboscis with 14 [not 22] rows of papillae .... *A. rubella anops* Hartman
(*Nephtys rubella*† [not Michaelsen] in CPF, see HARTMAN 1950)

Nephtys Cuvier

The listed species have 22 rows of papillae, with 8 or less papillae per row, on the proboscis.

1 Posterior antennae bifurcate (as in Fig. 19j) 2

Posterior antennae simple 3

2 Fenestrated setae lacking on posterior half of body. Setiger 3 without eyes. Up to 16 mm long. (See also Fig. 19j) .... *N. cornuta cornuta* Berkeley and Berkeley

Fenestrated setae present throughout. Setiger 3 with eyes. Less than 7.5 mm long .... *N. cornuta franciscana* Clark and Jones
(See Banse 1972)

3 Interramal cirrus recurved (as in Fig. 19f). Acicular lobes variable 4

Interramal cirrus not recurved, strongly flattened (as in Fig. 19c) or slightly flattened (as in Fig. 19k). Acicular lobes bilobed (as in Fig. 19k). Presetal and postsetal lobes small 11

4 Interramal cirri beginning on setiger 8–11. Acicular lobes deeply incised (Fig. 19o). Neuropodial postsetal lobe large. Proboscis with unpaired dorsal papilla, proximally with warts .... *N. punctata* Hartman

Interramal cirri beginning on setiger 3–6 5

5 Notopodial acicular lobe rounded (Fig. 19n). Neuropodial postsetal lobe large, lower edge concave. (See also Fig. 19m) .... *N. longosetosa* Oersted

Notopodial acicular lobe bilobed (as in Fig. 19d) or deeply incised (as in Fig. 19p) 6

6 Notopodial postsetal lobe very large (as in Fig. 19d) or medium-sized (as in Fig. 19p). Proboscis without unpaired dorsal papilla 7

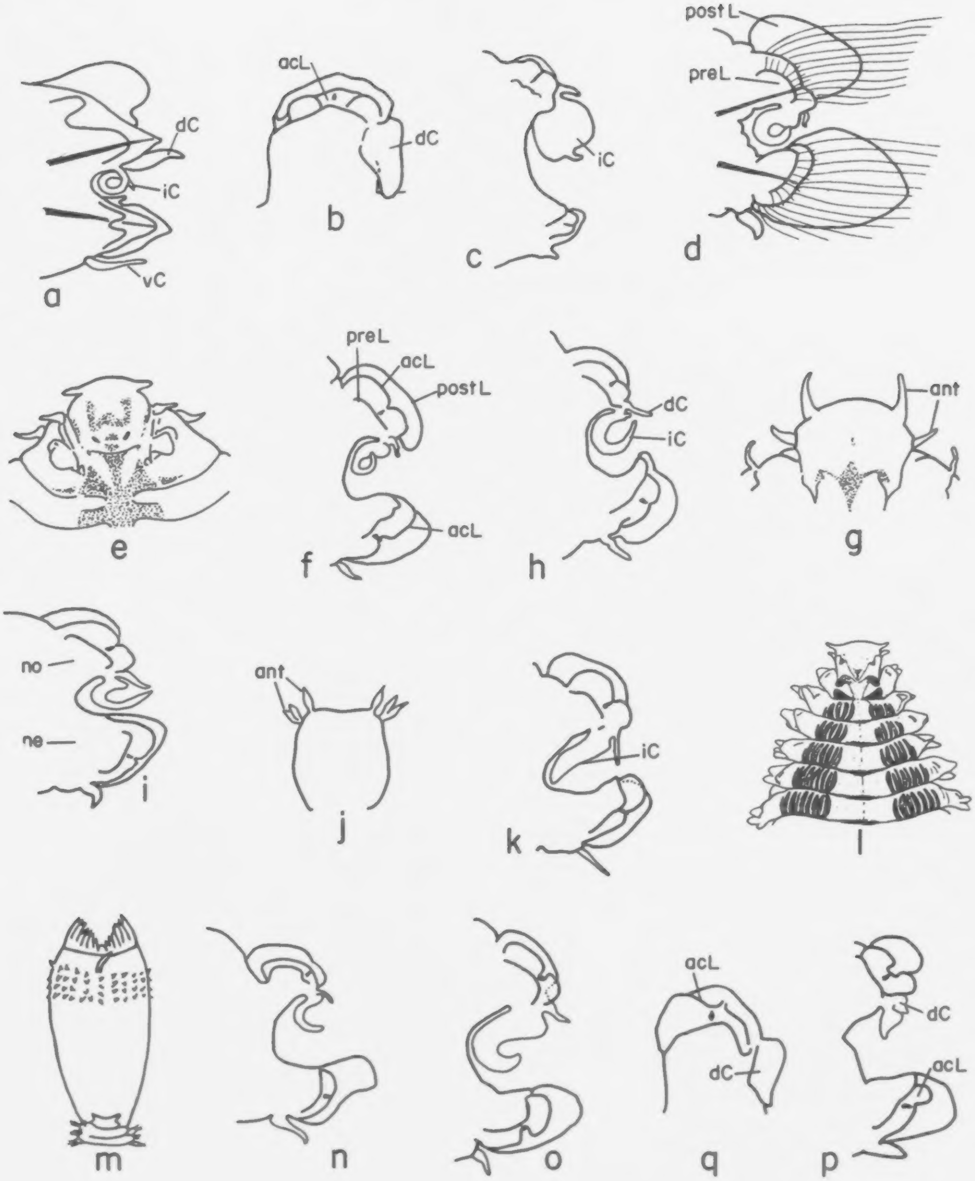
Notopodial postsetal lobe small (as in Fig. 19h). Proboscis with or without unpaired dorsal papilla 9

7 Both postsetal lobes very large (Fig. 19d). Notopodial acicular lobe bilobed. Interramal cirrus beginning on setiger 4–6 [long except in last few parapodia] .... *N. caeca* (Fabricius)

Notopodial postsetal lobe medium-sized (similar to Fig. 19p); neuropodial postsetal lobe large. Notopodial acicular lobe deeply incised. Interramal cirri beginning on setiger 6 8

8 Neuropodial acicular lobes of 10th (Fig. 19p) and adjacent parapodia with protuberance above acicula. Highest (most distal) point of acicular lobe of 1st notopodium not supported by acicula (Fig. 19q) .... *N. rickettsi* Hartman
(See Banse 1972; Berkeley and Berkeley 1962)

Neuropodial acicular lobes of 10th and adjacent parapodia without protuberance above acicula. Highest point of acicular lobe of 1st notopodium supported by acicula (Fig. 19b) .... *N. assignis* Hartman
(See Banse 1972; Banse and Hobson 1968)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9 Interramal cirri beginning on setiger 3. Dorsal pigment pattern as in Fig. 19g. Proboscis proximally smooth; usually without unpaired dorsal papilla. (See also Fig. 19h) .... *N. californiensis* Hartman
(In CPF, see also Berkeley 1972)

Interramal cirri beginning on setiger 4 or 5. Proboscis with unpaired dorsal papilla 10

10 Dorsal pigment pattern absent. Interramal cirri beginning on setiger 4–5. Notopodial postsetal lobe partly covered [anterior view] by large acicular lobe (Fig. 19i). Proboscis proximally with small warts .... *N. ciliata* (Müller)
In European material, the interramal cirri begin on setiger 8–10 (see Fauchald 1963).

Dorsal pigment pattern conspicuous (Fig. 19e). Interramal cirri beginning on setiger 4. Notopodial postsetal lobe not partly covered by acicular lobe (Fig. 19f). Proboscis proximally smooth .... *N. caecoides* Hartman

11 Interramal cirri flattened, wide, with small distal extension (Fig. 19c); beginning on setiger 5 .... *N. brachycephala* Moore
(See Berkeley 1966)

Interramal cirri pointing inward or downward [not curled (Fig. 19k)], beginning on setiger 3; somewhat flattened [sometimes more rounded distally than shown]. Dorsal pigment pattern in Fig. 19*l* [can fade in formalin–seawater]. Proboscis with unpaired dorsal papilla .... *N. ferruginea* Hartman

SPHAERODORIDAE

Table 3, fig. E; Fig. 20
Fauchald (1974); Hartman and Fauchald (1971)

1 Body short, less than 30 segments, thick; dorsum with 4 or more longitudinal rows of large spherical capsules (as in Fig. 20a,b,d). All setae compound .... *Sphaerodoropsis*

Body long, more than 50 segments, slender; dorsum with 2 longitudinal rows of large spherical capsules (as in Table 3, fig. E). All setae simple .... *Sphaerodorum*

Fig. 19. NEPHTYIDAE: [The complete parapodia are shown in anterior view.] *Aglaophamus rubella rubella*†: a, parapodium [setae omitted]. *Nephtys assignis*: b, right 1st notopodium, dorsal view [setae omitted]. *N. brachycephala*: c, 20th parapodium [setae omitted]. *N. caeca*: d, median parapodium. *N. caecoides*: e, anterior dorsal pigment pattern; f, 25th parapodium [setae omitted]. *N. californiensis*: g, anterior dorsal pigment pattern; h, 25th parapodium [setae omitted]. *N. ciliata*: i, median parapodium [setae omitted]. *N. cornuta cornuta*: j, prostomium, dorsal view. *N. ferruginea*: k, 20th parapodium [setae omitted]; *l*, anterior end, dorsal view [setae omitted]. *N. longosetosa*: m, anterior end, with everted proboscis, dorsal view [schematic]; n, median parapodium [setae omitted]. *N. punctata*: o, 25th parapodium [setae omitted]. *N. rickettsi*: p, 10th parapodium [setae omitted; the interramal cirrus differs from those of median parapodia]; q, right 1st notopodium, dorsal view [setae omitted]. Sources: a, d, i, n, Fauvel (1923); b, p, q, Banse (1972); c, m, Ushakov (1955); e–h, o, Hartman (1938b); j, Berkeley and Berkeley (1945); k, *l*, Hartman (1940) [a, h–j, n, modified].

Sphaerodoropsis Hartman and Fauchald

1 Dorsum with 4 longitudinal rows of large spherical capsules (Fig. 20a). Setae with smooth blades .... *S. biserialis* (Berkeley and Berkeley)*

(See *Sphaerodoridium*† *biserialis* in HARTMAN 1968)

Dorsum with 8–14 longitudinal rows of large spherical capsules (as in Fig. 20b,d). Setae with minutely serrated blades (as in Fig. 20c) 2

2 Dorsum with numerous irregularly arranged small papillae, in addition to large capsules (Fig. 20b). (See also Fig. 20c) ...... *S. minuta* (Webster and Benedict)

(*Sphaerodorum minutum* in CPF)

Dorsum without small papillae, with large capsules only (Fig. 20d) .... *S. sphaerulifer* (Moore)

(See *Sphaerodorum sphaerulifer* in USHAKOV 1955;
Sphaerodoridium† *sphaerulifer* in BANSE AND HOBSON 1968)

Sphaerodorum Oersted

Ephesia Rathke is included in this genus.

Body long, about 100 segments. Parapodium (Fig. 20e) with numerous [at least 12] small papillae and about 4–6 curved, slightly spurred, setae .... *S. papillifer* Moore

(*Ephesia papillifer* in CPF, see HARTMAN 1968)

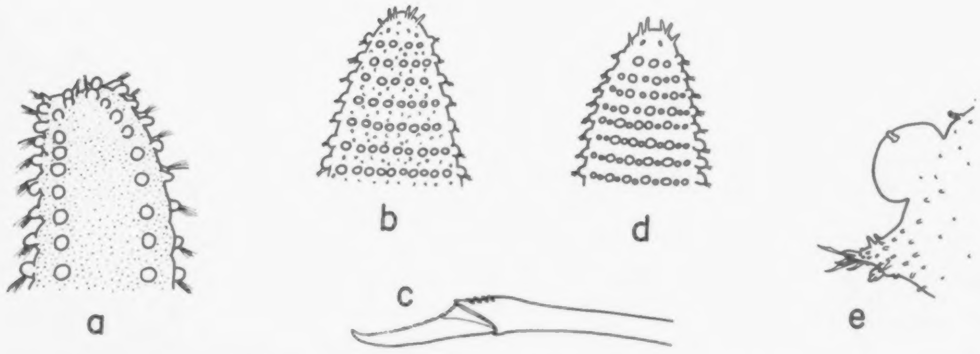

FIG. 20. SPHAERODORIDAE: *Sphaerodoropsis biserialis**: a, anterior end, dorsal view [prostomium and setiger 1 withdrawn]. *S. minuta*: b, anterior end, dorsal view; c, compound seta. *S. sphaerulifer*: d, anterior end, dorsal view. *Sphaerodorum papillifer*: e, parapodium. Sources: a, c, Imajima (1969); b, d, Ushakov (1955); e, Moore (1909b) [a, e, modified].

GLYCEROIDEA

Table 3, fig. F,G; Fig. 21–22
HARTMAN (1950)

1 Parapodia all uniramous or all, except first 2 pairs, biramous; dorsal cirri small, globular (as in Fig. 21c). Proboscis with 4 large jaws (as in Fig. 21d). Segments usually biannulate (as in Table 3, fig. F), occasionally tri- or tetrannulate .... GLYCERIDAE

Parapodia uniramous anteriorly, biramous posteriorly; dorsal cirri well developed, usually conical (as in Fig. 22a). Proboscis with 2 macrognaths and few to many micrognaths (as in Fig. 22d). Segments usually uniannulate (as in Table 3, fig. G), occasionally biannulate .... GONIADIDAE

GLYCERIDAE

Table 3, fig. F; Fig. 21
HARTMAN (1950)

Retractile gills will be partially or entirely withdrawn on some segments, but nonretractile gills should appear the same on all gill-bearing segments. Thus, it is important to examine the entire worm when determining whether gills are present and whether they are retractile or nonretractile.

1 Parapodia, except first 2 pairs, biramous (as in Fig. 21h) .... *Glycera*

Parapodia uniramous (as in Fig. 21 i) .... *Hemipodus*

Glycera Savigny

1 Parapodium with 1 postsetal and 1 or 2 presetal lobes (as in Fig. 21b), without gills 2

Parapodium with 2 postsetal and 2 presetal lobes (as in Fig. 21e), with or without gills 3

2 Median and posterior parapodia with 2 presetal lobes (Fig. 21b). Proboscidial organs without transverse ridges .... *G. capitata* Oersted
(*G. capitata* and *G. nana* Johnson in CPF, see BANSE et al. 1968)

Posterior parapodium with 1 presetal lobe. Proboscidial organs with 13–14 transverse ridges (Fig. 21g) .... *G. tenuis* Hartman*
(See HARTMAN 1968; HARTMAN AND REISH 1950)

3 Gills absent. Presetal lobes much longer than postsetal (as in Fig. 21h) 4

Gills present. Presetal lobes slightly longer or much longer than postsetal 5

4 Postsetal lobes pointed .... *G. siphonostoma* (delle Chiaje)
(See Imajima and Hartman 1964; Banse and Hobson 1968)

Postsetal lobes rounded (Fig. 21h) .... *G. tesselata* Grube

5 Gills retractile 6

Gills nonretractile 7

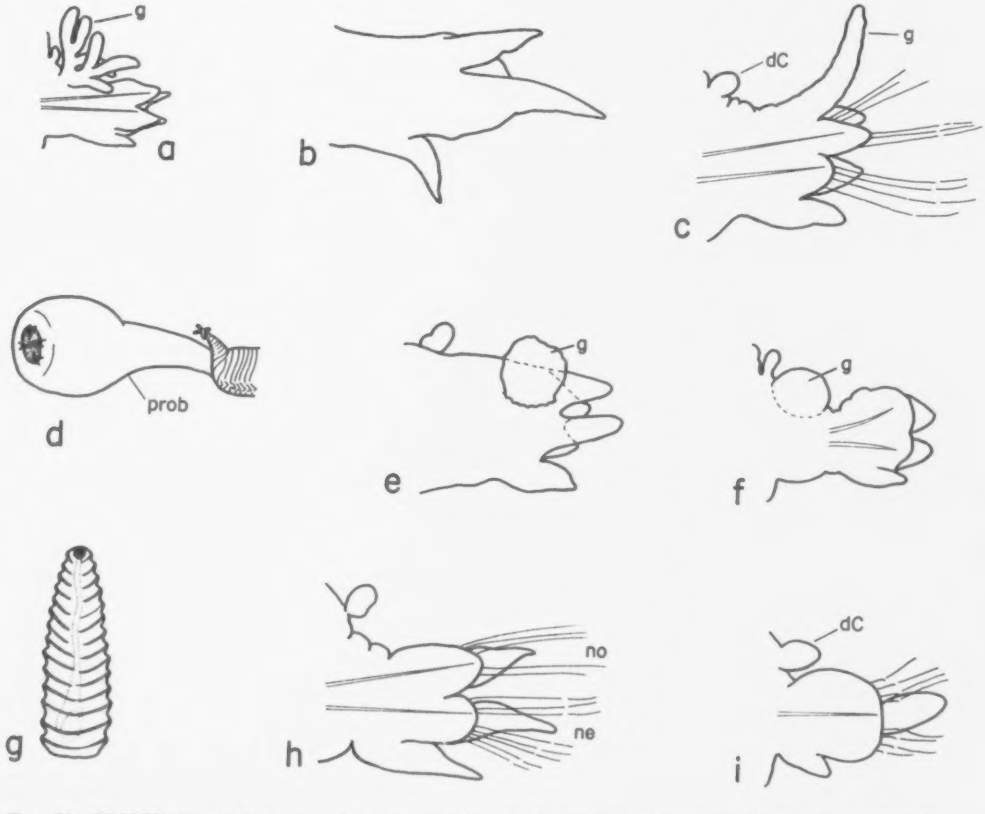

Fig. 21. GLYCERIDAE [all parapodia from median body region]: *Glycera americana*: a, parapodium. posterior view [setae omitted]. *G. capitata*: b, parapodium, anterior view [setae and aciculae omitted]. *G. convoluta*: c, parapodium, posterior view; d, anterior end, lateral view [proboscis everted]. *G. gigantea*: e, parapodium, anterior view [setae and aciculae omitted]. *G. robusta*: f, parapodium, posterior view [setae omitted]. *G. tenuis**: g, proboscidial organ. *G. tesselata*: h, parapodium, posterior view. ***Hemipodus borealis***: i, parapodium, posterior view. Sources: a, Pettibone (1963); b, original; c–e, h, Fauvel (1923); f, CPF; g, Hartman (1950); i, Johnson (1901) [c–g, i, modified].

6 Gills branched [some gills may appear finger-like if only 1 branch is extended], situated on posterior surface of parapodium (Fig. 21a) .... *G. americana* Leidy

Gills globular, situated on anterior surface of parapodium (Fig. 21e) .... *G. gigantea* Quatrefages

7 Gills finger-like, longer than parapodial lobes, situated on dorsal surface of parapodium (Fig. 21c). Neuropodial postsetal lobe shorter than notopodial postsetal lobe in median region (Fig. 21c). (See also Fig. 21d) .... *G. convoluta* Keferstein

Gills blister-like, shorter than parapodial lobes, situated on dorsal surface of parapodium (Fig. 21f). Neuropodial and notopodial postsetal lobes equal in length (Fig. 21f) .... *G. robusta* Ehlers

Hemipodus Quatrefages

Antennae not annulated. Presetal lobe longer than wide (Fig. 21 i). Length of proboscidial organs no greater than 3 times width .... *H. borealis* Johnson

GONIADIDAE

Table 3, fig. G; Fig. 22

Hartman (1950)

This family was not recognized in CPF; *Goniada* and *Glycinde* were included in the Glyceridae. Parapodia must be examined carefully to determine the presence and shape of notosetae, because notosetae may be few in number, short, and difficult to see.

1 Notosetae with knob below tip (as in Fig. 22c). Proboscis with several longitudinal rows of long spine-like proboscidial organs; without chevrons ...... *Glycinde*

Notosetae without knob below tip. Proboscis with small, scale-like proboscidial organs scattered over surface (as in Fig. 22d); with or without chevrons 2

2 Proboscis with chevrons (as in Fig. 22d) .... *Goniada*

Proboscis without chevrons .... *Ophioglycera*†

Glycinde Müller

In the listed species, the prostomium is annulated, rather than smooth, and the presetal neuropodial lobes are entire, instead of bifid, throughout the body.

1 Proboscis without ventral micrognaths. Presetal lobe of neuropodium 25 heart-shaped (Fig. 22a). Parapodia uniramous in setiger 1 through 27–30 .... *Gl. armigera* Moore

Gl. wireni† [not Arwidsson], recorded from British Columbia by Moore (1908), is referred to *Gl. armigera* by Pettibone (1954).

Proboscis with ventral micrognaths 2

2 Knobs of notosetae smooth. Presetal lobe of neuropodium 25 triangular to slightly heart-shaped (Fig. 22b) .... *Gl. picta* Berkeley

(In CPF, see also Banse 1972)

Knobs of notosetae ridged (Fig. 22c). Presetal lobe of neuropodium 25 heart-shaped (as in Fig. 22a) .... *Gl. polygnatha* Hartman

(See Hartman 1968; Hartman 1950)

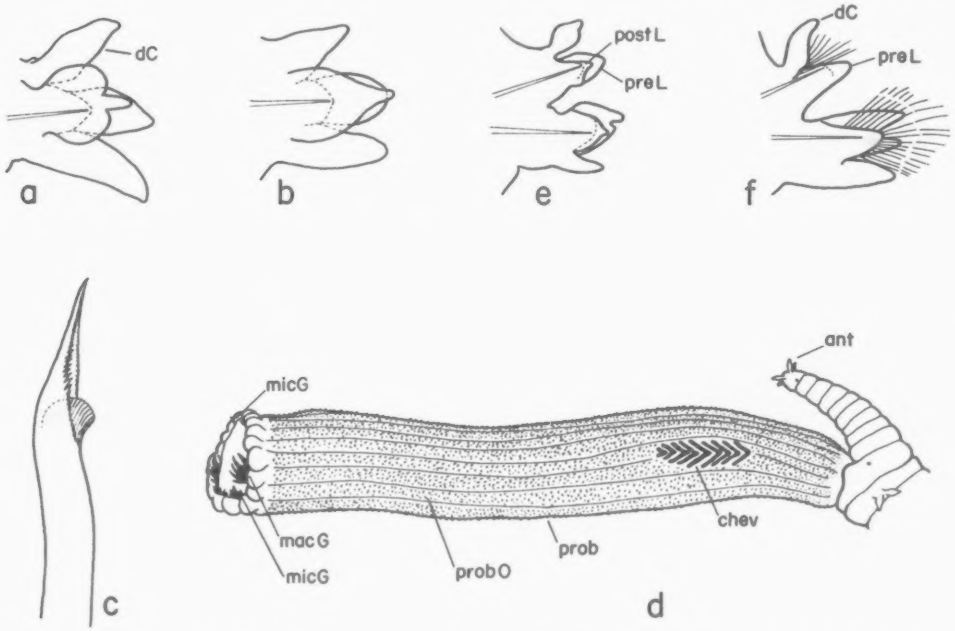

Fig. 22. GONIADIDAE: *Glycinde armigera*: a, 25th parapodium, anterior view [setae omitted]. *Gl. picta*: b. 25th parapodium, anterior view [setae omitted]. *Gl. polygnatha*: c, notoseta. *Goniada brunnea*: d, anterior end, lateral view [proboscis everted]; e, 85th parapodium, posterior view [setae omitted]. *G. maculata*: f, 48th parapodium, posterior view. Sources: a, Moore (1911); b, CPF, c–e, Hartman (1950); f, Fauvel (1923) [a, c–f, modified].

Goniada Audouin and Milne-Edwards

The listed species have hair-like, instead of acicular, notosetae, and 2, instead of 1, neuropodial presetal lobes on median and posterior parapodia (as in Fig. 22f).

1 Prostomium with less than 6 annuli. Dorsal arc of micrognaths well developed, with about 15 micrognaths .... *G. annulata* Moore

Prostomium with more than 6 annuli. Dorsal arc of micrognaths poorly developed, with 0–4 micrognaths (as in Fig. 22d) 2

2 Notopodium with small postsetal lobe (Fig. 22e). (See also Fig. 22d) .... *G. brunnea* Treadwell

Notopodium without postsetal lobe (Fig. 22f) .... *G. maculata* Oersted
(See Hartman 1950; Banse and Hobson 1968)

EUNICOIDEA

Table 4, fig. A–G; Fig. 23–26
Fauchald (1970); Hartman (1944)

The jaws consist of a pair of ventral mandibles and up to 5 pairs of dorsal maxillae (see Fig. 24c, 25c). At the base of maxilla I are the paired maxillary carriers, and sometimes also an unpaired median carrier (as in Fig. 25c,f).

1 **Without antennae** 2

With antennae 3

2 Limbate capillary setae (as in Table 4, fig. E) in all parapodia; hooded hooks absent. Maxillary carriers long, slender, with unpaired median piece (as in Fig. 25c,f) .... ARABELLIDAE

Limbate capillary setae in at least anterior parapodia; hooded hooks (as in Table 4, fig. C; Fig. 24h) in at least median and posterior parapodia. Maxillary carriers short, broad, without unpaired median piece (as in Fig. 24c) .... LUMBRINERIDAE

3 **With 2 antennae** 4

With 1, 3, 5, or 7 antennae 5

4 With 1 pair of palps (as in Table 4, fig. G). Parapodia without gills (as in Fig. 26f,i,k) .... DORVILLEIDAE

Without palps (as in Table 4, fig. D). Parapodia with branched or unbranched gills (as in Table 4, fig. D) .... IPHITIMIDAE†

5 Antennae poorly developed (as in Table 4, fig. F). Maxillary carriers long, slender, with unpaired median piece .... LYSARETIDAE†

Antennae well developed (as in Table 4, fig. A,B). Maxillary carriers short, broad, without unpaired median piece 6

6 With 7 antennae; posterior 5 antennae usually with annulated ceratophores (as in Table 4, fig. A) .... ONUPHIDAE

With 1, 3, or 5 antennae, without annulated ceratophores (as in Table 4, fig. B) .... EUNICIDAE

ONUPHIDAE

Table 4, fig. A; Fig. 23a–j

FAUCHALD (1968, 1972)

This family was not recognized in CPF; *Diopatra* and *Onuphis* were included in the Eunicidae. Anterior hooded hooks (see Table 4, fig. A) are usually pseudocompound, sometimes simple, and occur in the first few setigers. Subacicular hooks (see Fig. 23g) are simple and occur ventral to the aciculae in median and posterior setigers. Comb setae (see Fig. 23c) occur in median and posterior setigers, and spinigers (see Fig. 23h), when present, occur in some anterior setigers.

1 Tentacular cirri present (as in Fig. 23i) 2

Tentacular cirri absent 4

2 Gill with many spirally arranged filaments (as in Fig. 23a) .... *Diopatra*

Gill without spirally arranged filaments; either single filament (as in Fig. 23f), simply branched, comb-like (as in Fig. 23g), or absent 3

3 First 2 or 3 parapodia greatly enlarged and prolonged forward (as in Fig. 23i); with long slender setae with recurved tips and spiny shafts (as in Fig. 23j) .... *Rhamphobrachium*†

First 2 or 3 parapodia not greatly enlarged and prolonged forward (see Table 4, fig. A); with bi- or tridentate [rarely unidentate] hooded hooks with smooth shafts (as in Table 4, fig. A) .... *Onuphis*

4 Gills with several filaments, spirally arranged (as in Fig. 23a) on some segments .... *Epidiopatra*

Gills single filaments throughout (as in Fig. 23f) .... *Hyalinoecia*†

Diopatra Audouin and Milne-Edwards

Hooded hooks of anterior parapodia bidentate, with distal tooth at right angle [not oblique] to shaft (Fig. 23b). Comb setae with nearly straight [not strongly oblique] ends and many small teeth (Fig. 23c). (See also Fig. 23a) .... *D. ornata* Moore

Onuphis longibranchiata **Berkeley (1972) is referred herein to *D. ornata*, based on an examination of the type material.**

Epidiopatra Augener

With 3–5 pairs of gills, beginning on setiger 4–5, each following pair less well developed than the preceding. Antennae not papillated. Anterior hooded hooks bidentate, with short (as in Fig. 23b) hoods .... *E. hupferiana monroi* Day

(See DAY 1967; *E. hupferiana*† [not Augener] in BERKELEY 1956)

The specimen (USNM 36018), identified as *E. hupferiana*† by C. Berkeley, has been examined and is referred herein to *E. hupferiana monroi*.

Onuphis Audouin and Milne-Edwards

Nothria Malmgren is included in this genus. First occurrences of gills and of subacicular hooks vary with size in some species (Hobson 1971); thus this key should not be used for juveniles.

1 Gills comb-like (Fig. 23g), beginning on setiger 2–5. Anterior hooded hooks bidentate. Spinigers absent .... *O. parva* Moore*

(See HARTMAN 1968; HARTMAN AND REISH 1950)

Gills single filaments throughout (as in Fig. 23f), not comb-like 2

2 Anterior hooded hooks bidentate [may appear unidentate when worn (Fig. 23d)]. Gills beginning on setiger 8–20. Tube flat, covered with coarse gravel and shell fragments. Spinigers absent .... *O. conchylega* Sars

Most anterior hooded hooks tridentate (as in Table 4, fig. A). Tube cylindrical or absent 3

3 Gills beginning on setiger 1. Spinigers absent 4

Gills beginning after setiger 1. Spinigers present or absent 5

4 Gills thick on setiger 10 through 60–80 (Fig. 23e), slender on remaining setigers. Subacicular hooks beginning on setiger 9 [occasionally 10 or 11] .... *O. elegans* (Johnson)

Gills slender throughout (Fig. 23f). Subacicular hooks beginning on setiger 11–14 .... *O. iridescens* (Johnson)
(In CPF, see also HOBSON 1971)

5 Gills beginning on setiger 19–28, ending near pygidium. Spinigers (Fig. 23h) beginning on setiger 5–7 .... *O. stigmatis* Treadwell
(See *Nothria stigmatis* in HARTMAN 1968; TREADWELL 1922)

Gills beginning on setiger 3–6, ending at least 44 setigers anterior to pygidium. Spinigers absent .... *O. geophiliformis* (Moore)

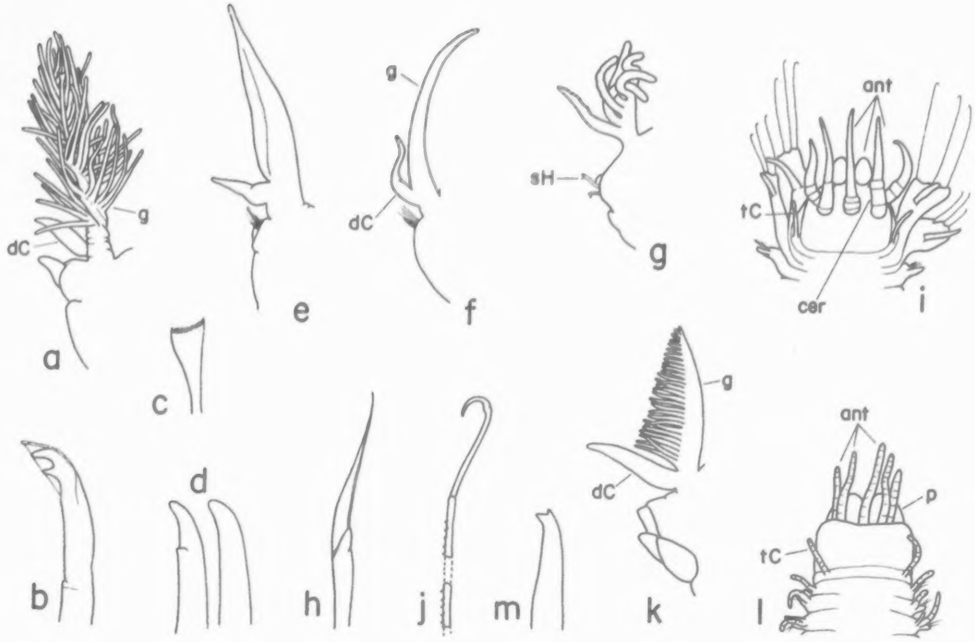

FIG. 23. ONUPHIDAE: *Diopatra ornata*: a, 14th parapodium; b, hooded hook; c, comb seta. *Onuphis conchylega*: d, hooks from 2nd parapodium [hood and teeth worn]. *O. elegans*: e, 25th parapodium. *O. iridescens*: f, 25th parapodium. *O. parva**: g, 25th parapodium. *O. stigmatis*: h, spiniger. *Rhamphobrachium*† sp.: i, anterior end, dorsal view; j, seta from anterior parapodium. EUNICIDAE: *Eunice aphroditois*: k, parapodium [setae omitted]. *E. valens*: *l*, anterior end, dorsal view; m, subacicular hook. Sources: a–c, g, Moore (1911); d, Pettibone (1970a); e, f, Hobson (1971); h, Hartman (1944); i, Fauchald (1968); j, Berkeley and Berkeley (1938b); k, McIntosh (1885); *l*, m, Fauchald (1969) [b, c, f, i, k, *l*, modified].

EUNICIDAE

Table 4, fig. B; Fig. 23k–m
FAUCHALD (1970); HARTMAN (1944)

Juveniles may not have the full complement of antennae. Subacicular hooks (see Fig. 23m) are present in the listed genera. They are simple and occur ventral to the acicula in median and posterior setigers.

1 With 1 or 3 antennae. Gills absent 2

With 5 antennae (as in Fig. 23*l*). Gills present 3

2 With 1 antenna .... *Nematonereis*†

With 3 antennae .... *Lysidice*†

3 With 1 pair of tentacular cirri (as in Fig. 23*l*) .... *Eunice*

Without tentacular cirri .... *Marphysa**

Eunice Cuvier

1 Subacicular hooks black, bidentate. Gills beginning on setiger 5–7, with 15–40 filaments where best developed (Fig. 23k) .... *E. aphroditois* (Pallas)
(See HARTMAN 1968; BERKELEY 1966)

Subacicular hooks (Fig. 23m) yellow, bidentate. Gills beginning on setiger 3, with 3–16 filaments where best developed. Median antenna short, with about 12 articles, extending to setiger 1–2 (Fig. 23*l*) .... *E. valens* (Chamberlin)
(*E. biannulata*† [not Moore] and *E. kobiensis*† [not McIntosh] in CPF, see also FAUCHALD 1969, GUSTUS 1972)

GUSTUS (1972) placed *E. valens* in synonymy with *E. kobiensis*. We believe, however, that *E. valens* is a valid species, by virtue of its shorter median antenna.

Marphysa Quatrefages*

Gills simple [not branched], beginning on setiger 16–20, ending about 20 setigers anterior to pygidium .... *M. stylobranchiata* Moore*
(See HARTMAN 1968; HARTMAN AND REISH 1950)

LUMBRINERIDAE

Table 4, fig. C; Fig. 24
FAUCHALD (1970); HARTMAN (1944)

This family was not recognized in CPF; *Ninoe* and *Lumbrineris* were included in the Eunicidae. In anterior parapodia, the postsetal lobe is moderately longer than the presetal lobe; in some species these lobes retain the same proportions in the remaining parapodia [pre- and postsetal lobes not elongate, as in Fig. 24g,i,j]. In other species one or both lobes may gradually elongate until in posterior parapodia either the postsetal lobe is long and slender [postsetal lobe elongate, as in Fig. 24d,e] or both lobes are long and slender [pre- and postsetal lobes elongate, as in Fig. 24a].

1 With gills on some parapodia (as in Fig. 24k). .... *Ninoe*

Without gills (as in Fig. 24a) .... *Lumbrineris*

Lumbrineris Blainville

The listed species have globular to conical prostomia (see Fig. 24b,f) [not extremely prolonged] and limbate setae of normal length [not more than twice the length of the hooded hooks].

1 All hooded hooks simple (as in Table 4, fig. C) 2

Hooded hooks compound (as in Fig. 24h) in first 7–30 setigers; simple in remaining setigers 6

2 Aciculae yellow. Hooded hooks beginning on setiger 1 3

Aciculae black. Hooded hooks beginning on setigers 4–25 5

3 Pre- and postsetal lobes of posterior parapodia not elongate (Fig. 24j). Body often crossed by brown bands (Fig. 24i, j) .... *L. zonata* (Johnson)
(*L. brevicirra*† [not Schmarda] in CPF, see also HARTMAN 1944)

At least postsetal lobes of posterior parapodia elongate (as in Fig. 24e). Body not banded 4

4 Both pre- and postsetal lobes of posterior parapodia elongate (as in Fig. 24a). Worm robust [more than 1 mm wide excluding parapodia] .... *L. lagunae* Fauchald
(See FAUCHALD 1970; *L. bifilaris*† [not Ehlers] in BERKELEY AND BERKELEY 1954)

Only postsetal lobes of posterior parapodia elongate (Fig. 24e). Worm slender [less than 1 mm wide excluding parapodia] .... *L. luti* Berkeley and Berkeley

5 Pre- and postsetal lobes of posterior parapodia elongate (Fig. 24a). Maxilla II with 4 or 5 [instead of 6] teeth. Hooded hooks beginning on setigers 4–25 .... *L. bicirrata* Treadwell
(*L. bifurcata*† [not McIntosh] in CPF, see also HARTMAN 1944)

Pre- and postsetal lobes of posterior parapodia not elongate. Maxilla II with 4 teeth. Hooded hooks beginning on setiger 7–11 .... *L. similabris* Treadwell

6 Prostomium globular (Fig. 24b). Dorsum of first 2 segments often with brown band. Aciculae amber to brown. Maxilla III with 3–4 teeth (Fig. 24c) .... *L. inflata* Moore

Prostomium conical (as in Fig. 24f) 7

7 Pre- and postsetal lobes of posterior parapodia not elongate 8

At least postsetal lobes of posterior parapodia elongate (as in Fig. 24d) 10

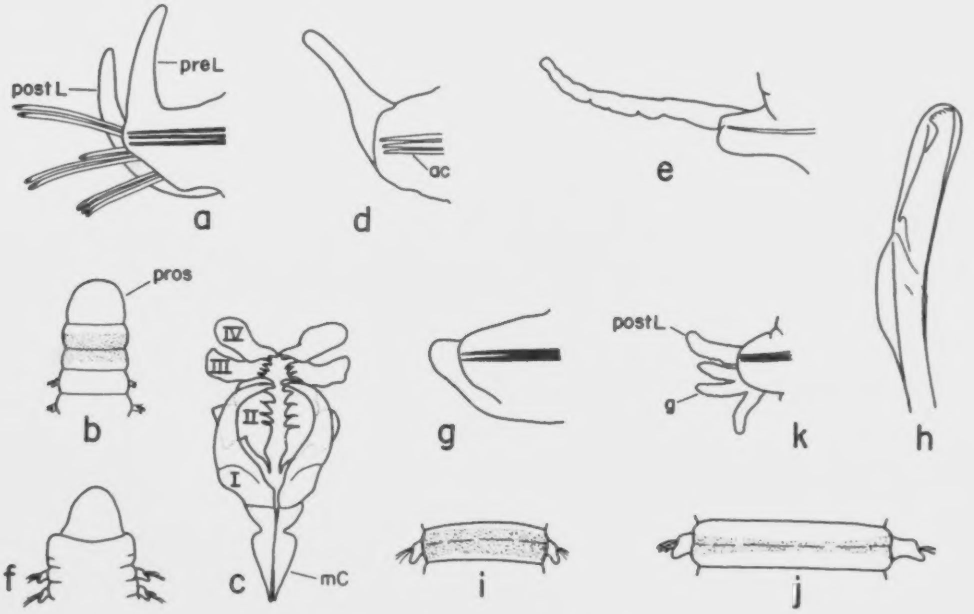

FIG. 24. LUMBRINERIDAE [all parapodia shown in anterior view]: *Lumbrineris bicirrata*: a, posterior parapodium. *L. inflata*: b, anterior end, dorsal view; c, maxillae. *L. limicola*: d, posterior parapodium [setae omitted]. *L. luti*: e, posterior parapodium [setae omitted]. *L. pallida*: f, anterior end, dorsal view; g, posterior parapodium [setae omitted]; h, hooded hook. *L. zonata*: i, anterior setiger, dorsal view; j, posterior setiger, dorsal view. *Ninoe gemmea*: k, median parapodium [setae omitted]. Sources: a, d, Hartman (1944); b, Treadwell (1922); c, k, Moore (1911); e, Berkeley and Berkeley (1945); f–h, Hobson (1971); i, j, Johnson (1901) [a–e, g, i–k, modified].

8 Aciculae yellow. Maxilla III with 2 teeth .... *L. latreilli* Audouin and Milne-Edwards

Aciculae black 9

9 Maxilla III with 1 tooth. (See also Fig. 24f–h) .... *L. pallida* Hartman
(See Hartman 1968; Hobson 1971)

Maxilla III with 2 teeth .... *L. japonica* (Marenzeller)
(See Hartman 1968; new record)

Lumbrineris japonica is newly recorded herein. Two specimens from the algal strewn, rocky intertidal shore at Whiffin Spit, near Sooke, Vancouver Island, British Columbia were collected by Dr A. E. Peden on July 8, 1972.

10 Only postsetal lobes of posterior parapodia elongate (Fig. 24d). Aciculae yellow .... *L. limicola* Hartman
(See Hartman 1968; questionable record by Banse et al. 1968)

Both pre- and postsetal lobes of posterior parapodia elongate (as in Fig. 24a).... 11

11 Aciculae yellow .... *L. cruzensis* Hartman

Aciculae black .... *L. californiensis* Hartman
(See Hartman 1968; Banse and Hobson 1968)

Ninoe Kinberg

With gills of 2–5 filaments ventral to the postsetal lobe (Fig. 24k) on setigers 3–8 through 30–50. Hooded hooks beginning on setiger 1 .... *N. gemmea* Moore

ARABELLIDAE

Table 4, fig. E; Fig. 25
Fauchald (1970); Hartman (1944)

This family was not recognized in CPF; *Arabella* was included in the Eunicidae. The listed genera have well developed maxillae (as in Fig. 25c,f).

1 Parapodium without acicular seta (see Fig. 24a–b) .... *Arabella*

Parapodium with acicular seta (as in Fig. 25d) 2

2 Maxilla I distally falcate (as in Fig. 25c), with or without teeth at base. Prostomium greatly flattened dorsoventrally .... *Drilonereis*

Maxilla I with teeth throughout length (as in Fig. 25f). Prostomium not greatly flattened .... *Notocirrus*

Arabella Grube

In the listed species, maxilla I is distally falcate, maxilla III has 4-7 teeth, maxilla IV has 2-6 teeth; the prostomium has 4 eyespots, which may be obscure in larger specimens; and segments lack bands of orange-brown pigment.

1 Postsetal lobe of posterior parapodium (Fig. 25a) not longer than that of anterior parapodium .... *A. iricolor* (Montagu)

Postsetal lobe of posterior parapodium (Fig. 25b) erect, longer than that of anterior parapodium .... *A. semimaculata* (Moore)
(See Hartman 1968; questionable record by Banse et al. 1968)

Drilonereis Claparède

1 Base of maxilla I without teeth. Mandibles absent .... *D. nuda* Moore*
(See Hartman 1948, 1968)

Base of maxilla I with teeth (as in Fig. 25c) 2

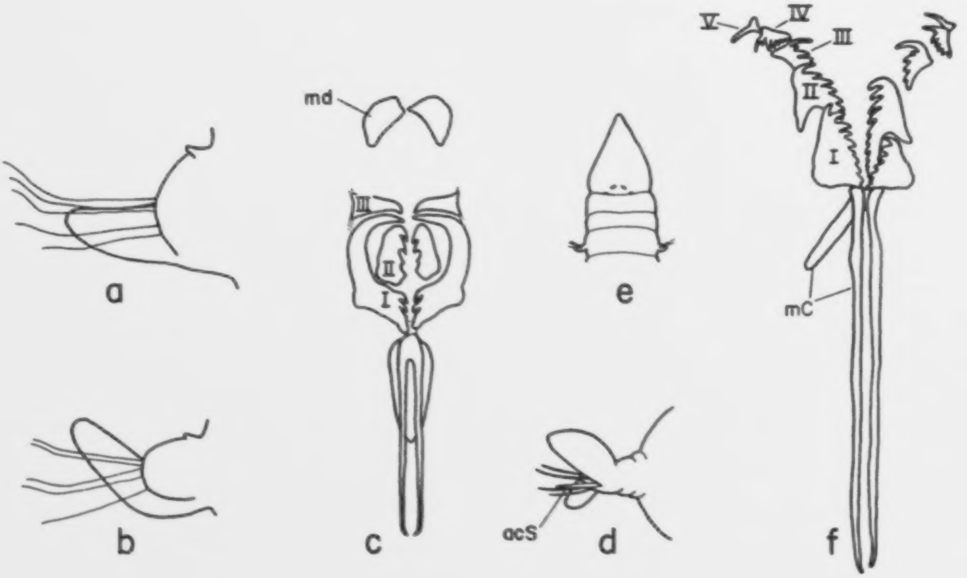

Fig. 25. ARABELLIDAE: *Arabella iricolor*: a, posterior parapodium, anterior view. *A. semimaculata*: b, posterior parapodium, anterior view. *Drilonereis falcata minor*: c, mandibles and maxillae. *D. longa*: d, posterior parapodium, posterior view. *Notocirrus californiensis*: e, anterior end, dorsal view; f, maxillae. Sources: a, b, Fauchald (1970); c, Hartman (1965a); d, Pettibone (1963); e, f, Hartman (1944) [a–d, f, modified].

2 Maxilla I with 2–3 teeth, maxilla II with 2 [plus 1 small basal] teeth, maxilla III unidentate, maxilla IV absent; mandibles present (Fig. 25c). Posterior parapodia with short presetal lobes, elongate postsetal lobes .... *D. falcata minor* Hartman
(See Hartman 1965a; Nichols 1971)

Maxilla I with 3–5 teeth, maxilla II with 6–8 teeth, maxilla III and IV unidentate; mandibles present or absent. Posterior parapodia with elongate pre- and postsetal lobes (Fig. 25d) .... *D. longa* Webster
(See Hartman 1968; Hobson 1971)

Notocirrus Schmarda

Prostomium longer than wide, distally acute, with 4 eyespots (Fig. 25e). Left maxilla I with 9 teeth, right maxilla I with 7 teeth (Fig. 25f) .... *N. californiensis* Hartman
(See Hartman 1968; Banse and Hobson 1968)

LYSARETIDAE†

Table 4, fig. F
Fauchald (1970); Imajima (1967b)

First 2 segments fused, appearing as 1 [not 2] distinct segment (as in Table 4, fig. F) .... *Oenone*†

DORVILLEIDAE

Table 4, fig. G; Fig. 26
Fauchald (1970); Hartman (1944); Pettibone (1961)

This family was not recognized in CPF; *Dorvillea* was included in the Eunicidae. When present, the forked setae are simple and occur in median and posterior, and usually also in anterior, parapodia.

1 Palps poorly developed, resembling small papillae (as in Fig. 26h). Parapodium uniramous (as in Fig. 26i). Forked setae absent .... *Ophryotrocha*

Palps well developed, usually long, often with distal style (as in Fig. 26e) 2

2 Parapodium with long dorsal cirrophore, enclosing notopodial acicula (as in Fig. 26f). Forked setae present or absent .... *Dorvillea*

Parapodium without dorsal cirrophore or notopodial acicula (as in Fig. 26k). Forked setae present .... *Protodorvillea*

Dorvillea Parfitt

Stauronereis **Verrill is included in this genus.**

1 Forked setae absent 2

Forked setae present, serrated laterally (as in Fig. 26b, c) 3

2 Antennae half length of palps. Palps without distal style .. *D. moniloceras* (Moore)

Antennae longer than palps. Palps with distal style (Fig. 26e) .... *D. pseudorubrovittata* Berkeley

3 Some compound setae with very long, slender blades (Fig. 26a) .... *D. annulata* (Moore)

Compound setae without long, slender blades (as in Fig. 26d) 4

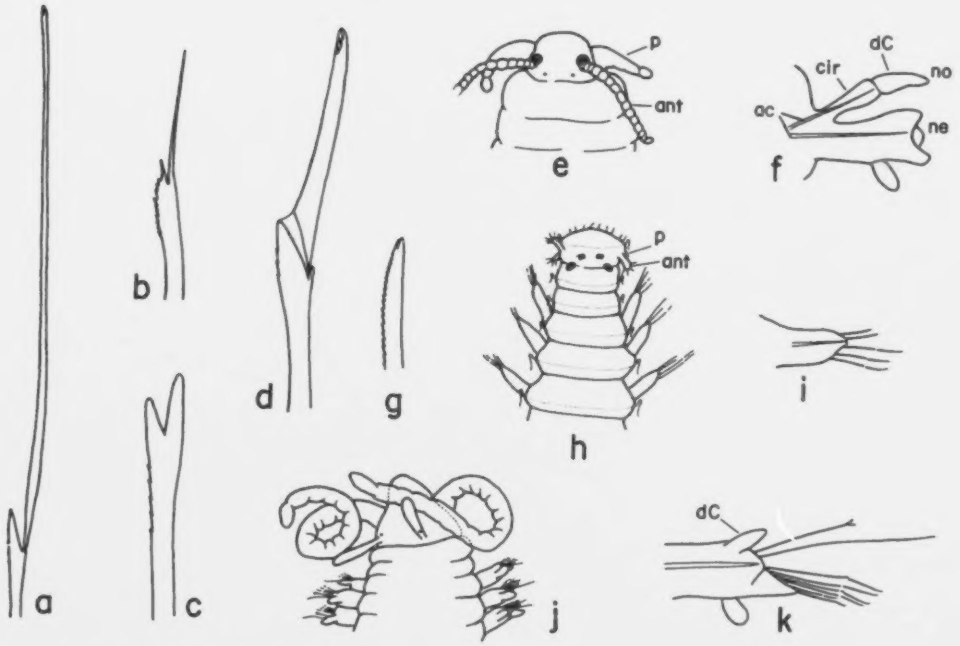

FIG. 26. DORVILLEIDAE: *Dorvillea annulata*: a, seta. *D. caeca*: b, seta. *D. japonica*: c, d, setae. *D. pseudorubrovittata*: e, anterior end, dorsal view. *D. rudolphi*: f, median parapodium, posterior view [setae omitted]; g, tip of anterior seta. *Ophryotrocha vivipara*: h, anterior end, dorsal view; i, parapodium, posterior view. *Protodorvillea gracilis*: j, anterior end, dorsal view; k, parapodium, posterior view. Sources: a, Moore (1906); b, Webster and Benedict (1884); c–e, g, k, original; f, Hartman (1938a); h, i, Banse (1963); j, Banse and Nichols (1968) [f, h–j, modified].

4 Forked setae with 2 very unequal, slender prongs (Fig. 26b) .... *D. caeca* (Webster and Benedict)
(See *Stauronereis caecus* in PETTIBONE 1963; HOBSON 1971)

Forked setae with 2 nearly equal, stout prongs (as in Fig. 26c) 5

5 Forked setae (Fig. 26c) beginning on setiger 1. Simple bidentate setae absent. (See also Fig. 26d) .... *D. japonica* (Annenkova)
(*D. neglecta*† [not Fauvel] in CPF;
Stauronereis japonica in BANSE AND NICHOLS 1968)

Forked setae beginning on setiger 2–15 [usually setiger 2–5]. Simple, laterally serrated bidentate setae (Fig. 26g) in first 1–16 setigers [usually first 1–5 setigers]. (See also Fig. 26f) .... *D. rudolphi* (delle Chiaje)
(In CPF, see also FAUCHALD 1970)

Ophryotrocha Claparède and Mecznikow

Adult with only 6 setigers. Anterior edge of mandible straight, toothed. Compound setae with long blades (Fig. 26i). (See also Fig. 26h) .... *O. vivipara* Banse
(See BANSE 1963)

Protodorvillea Pettibone

Antennae short, clavate; palps long (Fig. 26j). Dorsal cirri (Fig. 26k) beginning on setiger 1 .... *P. gracilis* (Hartman)
(See HOBSON 1971; *P. recuperata* n. sp. in BANSE AND NICHOLS 1968)

Addendum: *Bergstroemia* Banse, subgen. n.

DIAGNOSIS: A new subgenus of *Eulalia* Savigny, *s. l.* with four pairs of filiform tentacular cirri. Tentacular segments free of each other, the first dorsally reduced to varying degrees. Setal formula, $1 + S\frac{1}{1} + S\frac{1}{N}$. Proboscis with papillae, arranged proximally in diffuse pattern and distally in six broad longitudinal rows. Ventral parapodial cirrus very large, its long axis markedly oblique, or at right angles, to acicula.

TYPE SPECIES: *Eulalia sotniki* (Averincev 1972).

REMARK: This subgenus is named for Erik Bergström whose contribution to the development of the classification of the Phyllodocidae has not been recognized in this manner. A full discussion of the taxon will be published elsewhere (see Banse 1973).

Explanation of Abbreviations and Symbols

Arabic numerals indicate body segments, and Roman numerals indicate areas of the proboscis [in Nereidae] and the maxillae [in Eunicoidea] in the figures.

ac	acicula
acL	acicular lobe
acS	acicular seta
ant	antenna
ant'ly	anteriorly
car	caruncle
cer	ceratophore
chev	chevrons
cir	cirrophore
cpd	compound seta
CPF	Canadian Pacific Fauna (Berkeley and Berkeley 1948)
ct	ctenidium
dC	dorsal cirrus
dF	dorsal feltage
dT	dorsal tubercle
el	elytron
elph	elytrophore
fT	facial tubercle
g	gill
iC	interramal cirrus
li	ligule
macG	macrognath
mC	maxillary carrier
md	mandible
micG	micrognath
ne	neuropodium
no	notopodium
nuO	nuchal organ
nuP	nuchal papilla
p	palp
pN	protective notoseta
postL	postsetal lobe
post'ly	posteriorly
pP	prostomial peak
preL	presetal lobe
prob	proboscis
probO	proboscidial organ
pros	prostomium
prov	proventricle
pscp	pseudocompound seta
pyg	pygidium
setL	setigerous lobe
sH	subacicular hook
spl	simple seta
tC	tentacular cirrus
vC	ventral cirrus
* †	see "Use of the Keys," page 5

Glossary

We have defined the terms below as they are used in the key. Other authors may employ some of these terms in a slightly different sense. We have not included self-explanatory terms referring to position, such as "presetal" or "subacicular." Also not included are adjectives denoting shape, such as "clavate" and "pinnate," which can be found in a dictionary.

acicula — the stout internal chitinous rod supporting the noto- or neuropodium (see Table 1, fig. G; Fig. 26f).

acicular lobe — that part of the setigerous lobe supported by the acicula (see Fig. 19f).

acicular seta — a stout simple seta resembling an acicula (see Fig. 12e, 25d).

antenna — a paired or unpaired sensory appendage arising frontally or dorsally from the prostomium (see Fig. 3c, 23*l*).

biramous — referring to a parapodium with a noto- and neuropodium, each bearing an acicula and setae (see Fig. 7a, 18o).

capillary seta — any seta tapering to a fine point (see Fig. 3a, 4m).

caruncle — a sensory ridge extending posteriorly from the prostomium (see Fig. 7c, e).

ceratophore — the basal joint of an antenna (see Fig. 6k, 23i).

chevrons — dark V-shaped chitinous structures occurring in bilateral series near the base of the proboscis in some members of the Goniadidae (see Fig. 22d).

cirrophore — the basal joint of a tentacular, dorsal, or ventral cirrus (see Fig. 26f).

cirrus — a projection from the segments of the head region, the parapodium, or the pygidium [see tentacular, dorsal, interramal, or ventral cirrus].

comb seta — a simple seta with a comb-like arrangement of teeth on the distal end, in many members of the Onuphidae and Eunicidae (see Fig. 23c).

compound seta — a seta consisting of a distal blade which articulates with a shaft (see Fig. 6f, 18p, 26d).

ctenidium — a small ciliated, cushion-like structure situated on the parapodium [sometimes also dorsally on the first one or two segments] in many members of the Sigalionidae (see Fig. 6e).

dorsal cirrus — a projection emerging from the notopodium or from the dorsal side of a uniramous parapodium (see Fig. 18o; 26f,k).

dorsal feltage — a felt-like mass formed by very fine capillary notosetae and adherent sediment, mucus, or debris on the dorsum of many members of the Aphroditidae (see Table 1, fig. A,B).

dorsal tubercle — a dorsal swelling occupying the same position as the elytrophore on segments without elytra in the Aphroditoidea (see Fig. 2i).

elytron — a dorsal scale-like structure replacing the dorsal cirrus on certain segments in the Aphroditoidea (see Table 1, fig. B–F).

elytrophore — the basal lobe on which the elytron is borne (see Fig. 2i, 5*l*).

falciger — a compound seta with a distally hooked or blunt tip (see Fig. 6m, 18p).

facial tubercle — an anterior prostomial projection, ventral to the median antenna, in some members of the Aphroditoidea (see Fig. 1a).

gill — a respiratory structure emerging from the body wall or parapodium (see Fig. 6e, 21a).

heterogomph seta — a compound seta with an asymmetrical distal shaft ending (see Table 3, fig. C).

homogomph seta — a compound seta with a symmetrical distal shaft ending (see Fig. 18p).

hooded hook — a hook bearing a distal hood-like membrane (see Fig. 23b, 24h).

hook — a distally hooked seta (see Fig. 23b,d,m).

interramal cirrus — a projection between the notopodium and the neuropodium in the Nephtyidae (see Fig. 19a,c).

ligule — one or more triangular lobes [not supported by an acicula] of the parapodium in the Nereidae (see Fig. 18o).

limbate seta — a seta appearing with one or two flattened margins along much of its length (see Table 4, fig. E).

macrognath — a paired large black jaw piece on the proboscis in the Goniadidae (see Fig. 22d).

macrotubercle — a large chitinized projection of the elytron (see Fig. 2j).

mandible — a paired ventral jaw piece in the Eunicoidea (see Fig. 25c).

maxilla — a paired dorsal jaw piece in the Eunicoidea (see Fig. 24c, 25f).

maxillary carrier — a paired jaw piece, with or without a median unpaired piece, at the base of maxilla I in the Eunicoidea (see Fig. 24c, 25f).

maxillary ring — the distal part of the proboscis [near the jaws] in the Nereidae (see Fig. 18i,j).

micrognaths — small black jaw pieces typically arranged in an arc above and below the macrognaths in the Goniadidae (see Fig. 22d).

microtubercle — a small chitinized projection of the elytron (see Fig. 4h).

neuropodium — the ventral branch of the parapodium (see Fig. 18o, 21h).

neuroseta — a seta of the neuropodium.

notopodium — the dorsal branch of the parapodium (see Fig. 18o, 21h).

notoseta — a seta of the notopodium.

nuchal organ — a paired sensory structure borne on the posterior margin of the prostomium, in the form of a pit, groove, outgrowth, or backward projection (see Fig. 9i, 13d). May be retractile or nonretractile.

nuchal papilla — a small unpaired projection on the posterior margin of the prostomium in some members of the Phyllodocidae (see Fig. 10e). Never occurring when median antenna is present.

oral ring — the proximal part of the proboscis [near the mouth] in the Nereidae (see Fig. 18i,j).

palp — a paired sensory appendage which, in errantiate polychaetes, is borne frontally or ventrally on the prostomium (see Fig. 5k, 26e).

paragnath — a chitinized papilla on the outside of the everted proboscis in the Nereidae (see Fig. 18a–c,i,j).

parapodium — the paired segmental structure which bears the setae and often also the gills. Typically it is biramous, *i.e.* it consists of a notopodium and neuropodium, each of which bears an acicula and setae (see Fig. 18o, 19d). However, the acicula may be absent and the seta may be reduced or absent in the notopodium [see subbiramous, uniramous].

proboscidial organs — small papillae covering the surface of the proboscis in the Glyceroidea (see Fig. 21g, 22d).

proboscis — the anterior part of the gut eversible through the mouth, sometimes armed with jaw pieces (see Table 2, fig. H; Table 3, fig. C).

prostomial peaks — paired anteriolateral, often chitinized, prolongations of the prostomium in some members of the Polynoidae (see Fig. 4c).

prostomium — the anterior presegmental region (see Table 3, fig. A; Fig. 24b).

protective notoseta — a stout dark simple seta, often protruding through the dorsal feltage in some members of the Aphroditoidea (see Table 1, fig. A).

proventricle — a muscular, transversely striated, barrel-shaped organ posterior to the pharynx in the Syllidae (see Table 3, fig. A).

pseudocompound seta — a seta, superficially appearing articulated (see Table 4, fig. A; Fig. 16p).

pygidium — the posterior postsegmental region bearing the anus and anal cirri (see Table 2, fig. H).

segment — a unit that is repeated serially between the prostomium and pygidium. Each segment has a pair of parapodia, which often are reduced or lost in segments of the head or tail region.

seta — a chitinous bristle emerging from the parapodium (see Fig. 1b–g, 16d–i, 23b–d, 26a–d).

setiger — any segment that bears setae.

setigerous lobe — the part of the notopodium or neuropodium bearing the setae (see Fig. 18o).

simple seta — an unjointed seta (see Fig. 5i, 26b).

spiniger — a compound seta with a straight, pointed tip (see Fig. 6f, 23h).

subacicular hook — a simple hooded hook occurring below the acicula in many members of the Onuphidae and Eunicidae (see Fig. 23g,m).

subbiramous — referring to a parapodium with a reduced notopodium, *i.e.* a notopodium with an acicula and few or no setae (see Fig. 5c, 11a,d, 26f).

tentacular cirrus — a paired appendage borne on modified segments of the head region (see Fig. 5k, 9g, 23i).

tentacular segment — a segment bearing tentacular cirri.

trepan — a ring of pharyngeal teeth, with the teeth having a similar refractive index as the setae, in some members of the Syllidae (see Fig. 17b).

uniramous — referring to a parapodium without notosetae or a notopodial acicula (see Fig. 9b, 21i, 26k).

ventral cirrus — a projection from the neuropodium (see Fig. 6e, 9i).

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BERKELEY AND BERKELEY, 1938, Ser. 11, Vol. 1, Fig. 1, p. 35; Fig. 2, p. 36; Fig. 3, p. 37.
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